

# OPERATING GUIDE

## NAVIGATOR™ SYSTEM PROCESSORS



*loudspeaker controller*

*matrix mixer*

*signal router*

**SABINE**  
the sound of innovation

[www.Sabine.com](http://www.Sabine.com)





**EC - DECLARATION OF CONFORMITY**  
**CE MARKING**

**SABINE, INC.**  
**13301 NW US HIGHWAY 441**  
**ALACHUA, FLORIDA USA**

declare that the product

**EQUALIZER**  
**SABINE MODEL NAVIGATOR**

Is in conformity with

**Council Directive: 73/23/EEC and 89/336/EEC (EMC Directives)**

Standards to which conformity is declared:

EN 60065: 1993  
EN 60742: 1995  
EN 55103-1: 1997  
EN 55022: 08:94 + a1:05:05  
EN 55103-2: 1997

Manufacturer's Signature: \_\_\_\_\_



Date: SEPTEMBER 30, 2005

Name: Doran Oster, Sabine President

**NAVIGATOR SERIES:**

- Front Panel Controlable
- Line Inputs
- Remote Control Wall Panel Ready
- Ethernet Control Ready

**NAV240-U** (2 x 4 System Processor)

**NAV360-U** (3 x 6 System Processor)

**NAV4802-U** (4 x 8 System Processor)

**NAV8802-U** (8 x 8 System Processor)

**NAVIGATOR S SERIES:**

- No Front Panel Control (for security)
- Mic / Line inputs
- Remote Control Wall Panel
- Ethernet Control Ready

**NAV240-S** (Blank Front 2 x 4 System Processor)

**NAV360-S** (Blank Front 3 x 6 System Processor)

**NAV4802-S** (Blank Front 4 x 8 System Processor)

**NAV8802-S** (Blank Front 8 x 8 System Processor)

**NAVRC-100** (Wall-mounted remote control panel [requires -R Option])

- 24-bit A/D and D/A conversion, 40-bit extended processing
- 20 to 20 KHz Frequency Response
- +18 dBu Maximum Signal Input & Output
- Floating Point SHARC Processor
- 115 dB dynamic range

**Each Input/Output channel provides**

- Precise control of Level and Polarity
- Parametric Filters: up to 8 filters, numeric or graphic control
- Crossover: Bessel, Butterworth, and Linkwitz Riley filters; slopes to 48 dB/octave
- High Shelf Filter (3KHz to 20KHz) and Low Shelf Filter (20 Hz to 1KHz)
- FBX Feedback Exterminator: 8 Filters, with Setup Mode
- Compressor/Limiter, with controls for ratio, threshold, attack, release, and gain
- Digital Delay, up to 650 (80 on 240 & 360) msec delay, adjustable in 21 microsecond increments
- Bypass: dedicated switches for all functions
- Channel Select buttons that toggle between Mute and Edit, with easy linking
- LED Indicators: Edit, Mute, Level
- LCD Display: All parameters and status displays
- Store up to 30 programs
- Multiple levels of password security
- Front panel RS232 and USB connections for computer control

**Navigator2 Remote for Windows™** Software included with every unit; runs up to 16 Navigators:

All front panel controls, plus more, including:

- Graphic filter adjustments
- Password protection
- View & edit frequency response curves
- Store and recall files, setups, programs
- Control and link up to 16 Navigators (4802 and 8802 units only)
- Future-proof FREE Flash RAM upgrade capability: upgrade your firmware and software using Sabine's Navigator Upgrade Wizard

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## Section One: Introduction

Congratulations on your purchase of the Sabine Navigator. These products are our latest versions of the popular Navigator System Processors.

The new Navigators come in four basic input/output configurations. The NAV240 is a 2 by 4, the NAV360 is a 3 by 6, the NAV4802 is 4 by 8, and the NAV8802 is an 8 by 8. These System Processors are equally at home in both touring and installation applications, where they provide loudspeaker management, matrix mixing, and signal routing. State-of-the-art hardware and firmware guarantee superior sound quality and reliability.

All firmware and software can be upgraded using Sabine's Upgrade Wizard software, included on your Navigator CD.

Aside from the powerful array of features packed into a single unit (multiple crossovers, complete signal routing and mixing, FBX filters, parametric filters, high and low shelf filters, delay, compression, and limiting), the Navigator also offers a choice of user interfaces.

**Computer control:** When you install the included Navigator Remote Control Software you will see a very powerful yet simple user interface. All parameters and system status monitors are available without burying you in cryptic menus. From here you control all audio, security, linking, and file saving functions, and you can manage your entire network of Navigators.

**Front Panel Control:** The Navigator combines the best of both worlds. The front panel provides access to every audio and system function for each device. Gain control for each input and output is one touch away. LED signal meters for each input and output provide a clear picture of signal status, and editing is fast with the datawheel and cursor keys. Quickly control multiple channels simultaneously by pressing several channel buttons at the same time, which is very handy for those global changes. Also available in Blank Front Panel.

**NAVRC-100 Wall-Mount Remote Panel:** The attractive NAVRC-100 wall-mounted remote control panel allows for control of presets, gain, muting, and other basic functions. One NAVRC-100 can control up to 2 Navigators, and one Navigator can be controlled by up to 32 NAVRC-100 panels.

**Serial Remote Control Devices:** Navigators are compatible with all the major serial controllers, including Crestron, AMX, and Cue.

### How to Use this Operating Guide

Detailed instructions are provided for all front panel controls, but you will probably be able to get going after taking a look at the Quick Start page. The instructions apply to all Navigators except where noted.

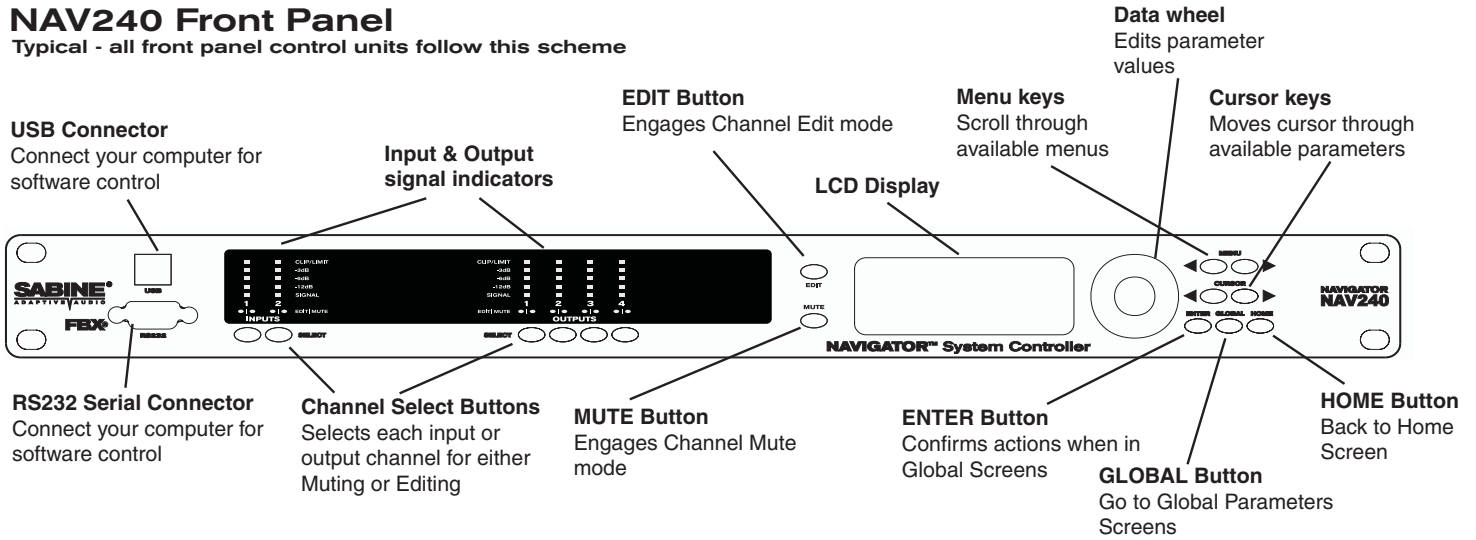
Later in this guide is an overview of installing and using the Navigator Remote Control Software. For more detailed information please see the Help section of the software.

If you have any questions you may call Sabine's Customer Service Department at 386-418-2000 from 9:30 am to 6:00 pm EST.

## Section Two: Front & Back Panel Views

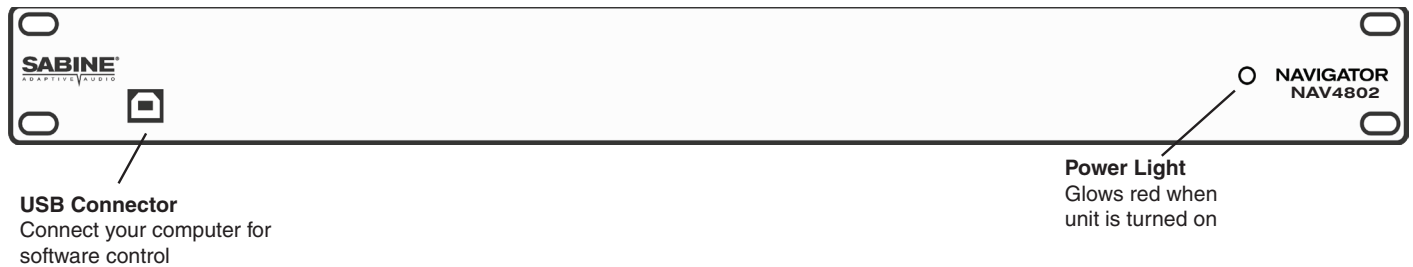
### NAV240 Front Panel

Typical - all front panel control units follow this scheme



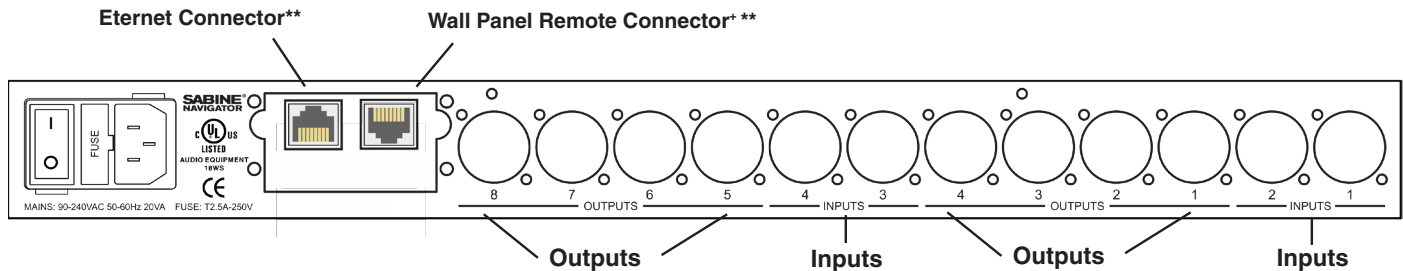
### NAV4802-S Blank Front Panel

Typical - all blank front panel units follow this scheme



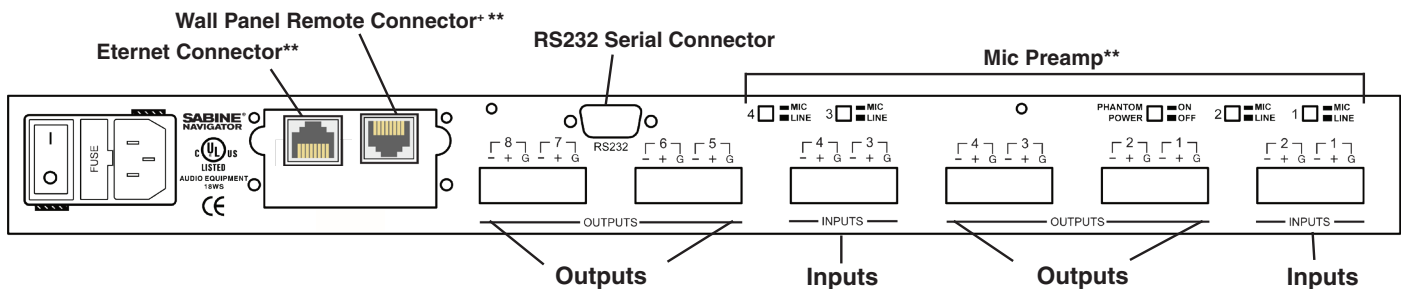
### NAV4802 Back Panel (8802 has euro connectors only)

Typical - all front panel control units follow this scheme - options vary



### NAV4802-S Back Panel

Typical - all blank panel units follow this scheme - options vary



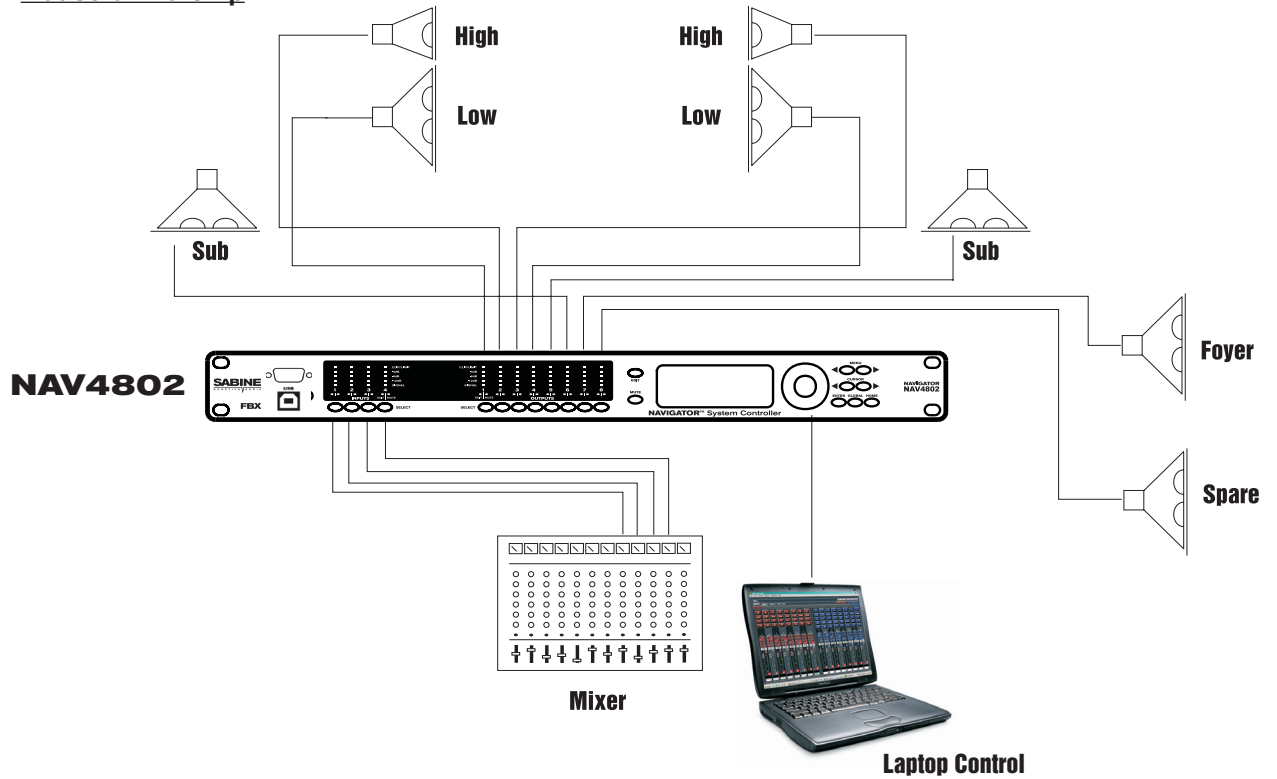
+ NAVRC-100 required \*\*Available options



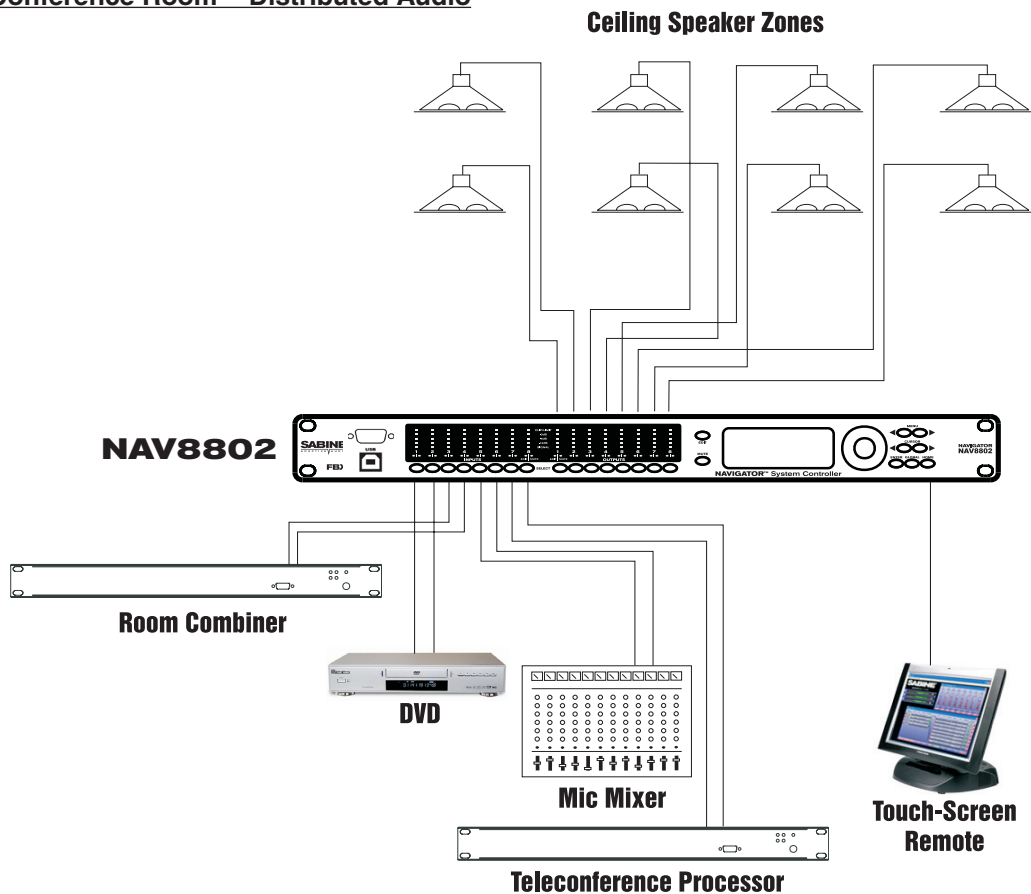
## Section Three: Navigator Applications

### 3.1 INSTALLED AUDIO

#### House of Worship

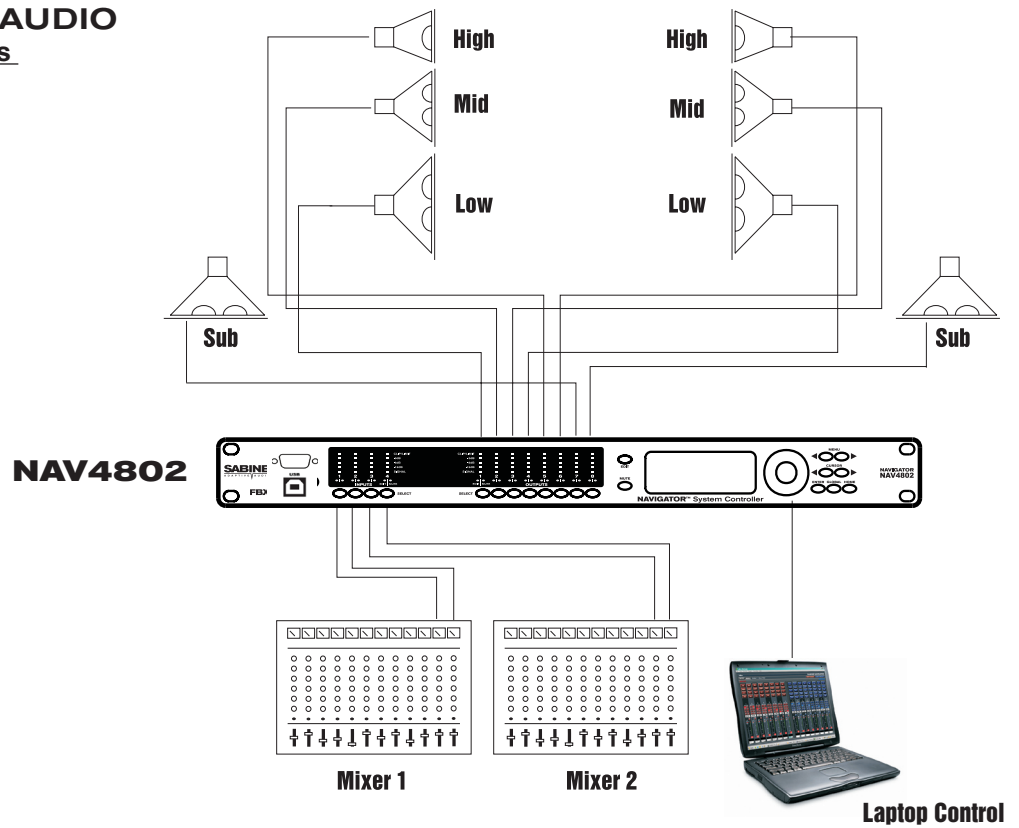


#### Conference Room - Distributed Audio

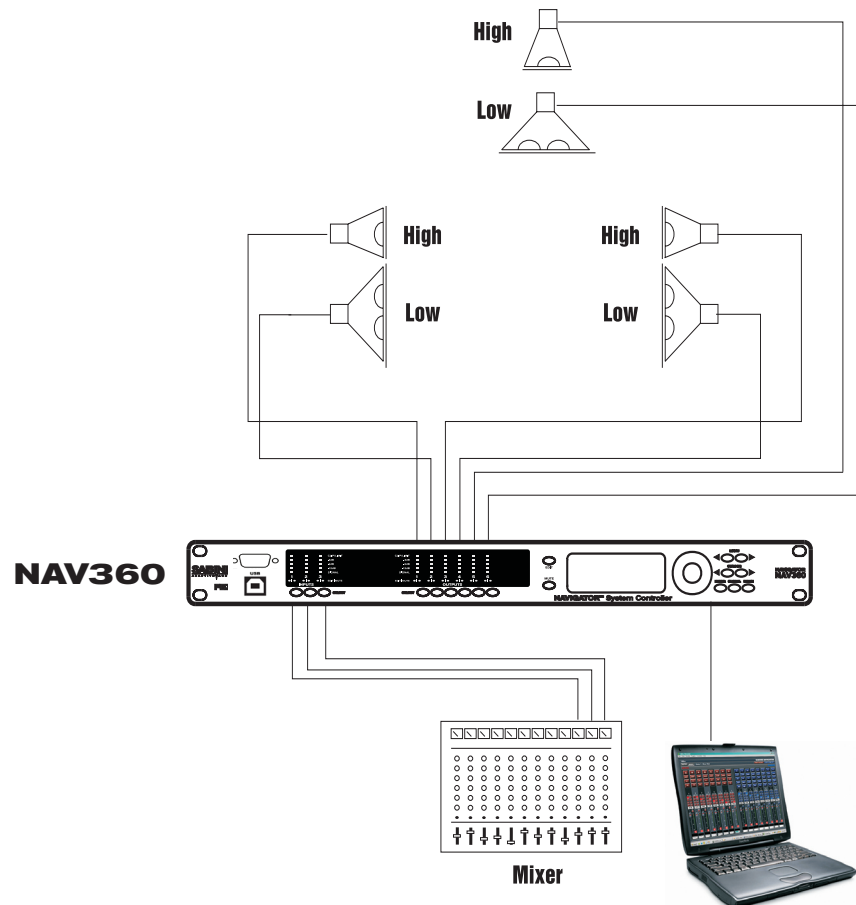


### 3.2 PRODUCTION AUDIO

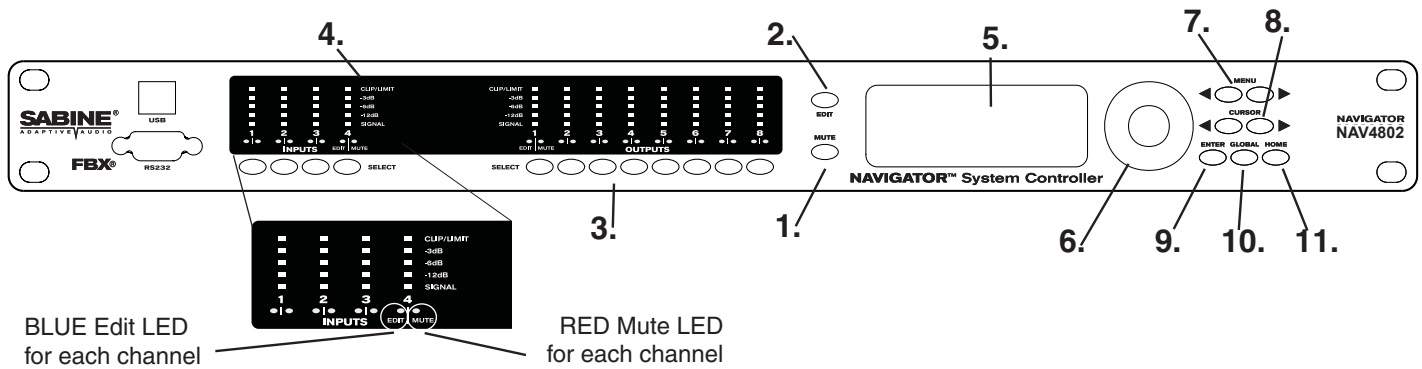
Stereo 3-way, with Subs



Left, Center, Right



## Section Four: Using Navigator Front Panel Controls



**1. MUTE Button:** Select this to turn the Channel Select Buttons into MUTE buttons. Each press of a Channel Select button toggles that channel's Mute Status, and the RED Mute LED will light indicating the channel is muted.

**2. EDIT Button:** Select this to turn the Channel Select Buttons into EDIT buttons. Each press of a Channel Select toggles that channel's Edit Status, and the BLUE Edit LED will light indicating the channel is in Edit Mode.

**3. Channel Select Buttons:** Selects the corresponding channel for either Editing or Muting as described above. Press again to toggle off either Edit or Mute modes. When in Edit mode the LCD menu display pertains to the channel(s) that are selected. The last modified menu will be displayed on the LCD.

**CHANNEL LINKING:** Linking multiple channels is accomplished by **pressing multiple input or output channel select buttons at the same time**. In this way you apply your edits to multiple channels simultaneously. Linking is very powerful - it simplifies programming for common parameter values across multiple channels. Multiple inputs can be linked together and multiple outputs can be linked together. You cannot link inputs to outputs.

**4. Peak Level LEDs:** Indicates the current peak level of the Input or Output Signal. Ranges are Signal (anything below -12 dB), -12dB, -6dB, -3dB, Clip/Limit. The Input **Clip** LED references to the device's maximum headroom. The Output **Limit** LED references to the threshold of the limiter.

**5. LCD:** Shows all the necessary information for editing all parameters.

**6. Rotary Data Wheel:** Changes parameter data values. The wheel has travel velocity sensing which allow for large or small incremental data changes. For extra coarse modification of delay and frequency (1 Hz resolution) values, pressing the **Enter** key simultaneously will increment/decrement the data value by 100 X.

**7. MENU Buttons:** The two Menu buttons move through the menus in a linear format.

**<< Menu:** Previous menu screen; **Menu>>:** Next menu screen

**8. CURSOR Buttons:** After choosing a menu to work with, use these keys to move through each of the editable parameters within the Menu in a linear format. These also move the cursor in certain screens.

**<<Cursor:** Previous parameter or cursor position; **Cursor>>:** Next parameter or cursor position

**9. ENTER Button:** Press this key to execute changes in the Global Parameters Screens and in the FBX Setup Screen to initiate Setup Mode. **Fast scrolling with the Enter key:** Press this key while turning the data wheel to modify delay and frequency (1 Hz resolution mode) data values by 100X.

**10. GLOBAL Button:** Choose this button to enter the special Global Parameters menu.

**11. HOME Button:** Choose this button to return to the Navigator's Home screen, which displays the model number and the last loaded preset. This also exits both Edit and Mute modes.

## TECH TIP

For fast scrolling of frequency or delay values, hold the Enter Key while turning the datawheel

#### 4.1. GETTING STARTED WITH THE NAVIGATOR FRONT PANEL

- After powering up the unit, the following initialization screen is displayed on the LCD:

*SABINE	NAV4802*
NAV	v1.0

- The initialization process takes about 8 seconds and during that period the unit boots and displays the Navigator firmware version.
- After the initialization process is finished the Navigator displays its main screen:

*SABINE	NAV4802*
P01 MAIN	_____

- The screen shows the current program number and program name assigned to the unit. The program assigned is always the last program the user recalled or stored before powering down the unit.
- The Navigator is now ready to go.

##### 4.1.1 Configuring The Navigator

Working with your Navigator is easy. Follow these basic steps as a guide to setting up the your system. For details on working within each menu, please read Section Five on operating the Navigator.

1. **Signal Routing:** You first need to get your inputs routed to the appropriate outputs. You can do this in two ways.
  - A. Press Enter to enter the Global Parameters Menu, press the >>Menu key until you get to the Configuration Menu, and choose one of the preset configurations. This is the fast way to get all your routing done.
  - B. Or you can press the Select key on one of the outputs, press the >>Menu until you get to the Source Menu, and choose which of the inputs you want to patch to this particular output.
2. **Set Input/Output Gain:** The first menu you see when pressing the Select key on each input or output is the Signal Menu. The cursor is already in the Level field, and you can immediately turn the datawheel to adjust the input and output gain of each channel. This fast access to gain is very handy for quick adjustments during your program.
3. **Mixing:** Mixing for each output is done in the Source Menu of each output (see 1.B. above). In this menu each input has a gain control so you can set the levels to create just the right mix in this particular output.
4. **Crossover Filters:** At this point you may want to set the crossover filters for each of the outputs. You are essentially controlling which band of frequencies you will send to each of your speakers or speaker systems. Press the Select key for the output you want to set, and press the Menu key until you get to the XOVER Menu. You will set filters for the lower and upper rolloff points, the slopes of the filters, and type of each filter.
5. **Equalization:** You may want to adjust the frequency response of your system. The Navigator gives you a powerful set of EQ tools. For each input and output you can use up to eight filters, and these can be either Parametric, High Shelving, or Low Shelving filters. Press the Select button on any input or output channel to access the EQ Menu.
6. **FBX Feedback Exterminator:** Each input channel includes 8 patented FBX feedback control filters. Use the FBX Mode menu to begin Setup Mode for maximum gain before feedback. See the results of the process in the FBX Menu, and change the default FBX parameters on the FBX Global Menu.
7. **Save your work:** You know how important this one is. If you are editing in the input/output menus, press Home to get to the Main Menu. Then press Global to get to the Global Parameters Menus, and scroll to the Store Menu. Save and name your program here. Do it early and often!

## Section Five: Operating the Navigator

### 5.1 INPUT MENUS

Each of the Navigator input channels has a separate **Menu** key. There are 7 function menus for each input channel, and you cycle through these by pressing the Menu keys. The first line in the LCD indicates which input channel you are editing, and shows the name of that channel if you have added one (for example, IN\_1: \_\_\_\_\_). The menus are arranged in a linear fashion. Scroll to the right to reach the end, then scroll back to the left until you reach the beginning. Use the Cursor keys to select a parameter to edit, and use the Data Wheel to make your edit.

#### Signal

NAV4802 &amp; NAV8802

IN_1: _____	MENU: Signal
LEVEL: 0.00dB	
POL : +	
DELAY: 0 (000.000 ms)	

- LEVEL: Gain, -40.00 dB to +15.00 dB in 0.25 dB steps.
- POL: Polarity, can be normal (+) or inverted (-).
- DELAY: Delay in 21 microsecond steps. Can be displayed in ms, ft or m. The time unit of the delay can be changed in the **Global Parameters** menu. The maximum delay is 80 ms in the NAV240 and 360. And, maximum delay is 650 ms in the NAV4802 and 8802.

NAV240, 360

I1: _____	Signal
LEVEL: 0.00 dB	

I1: _____	Signal
POL: +	

I1: _____	Signal
DELAY: 000.000 ms	

#### NAV240, 360

LCD Display has only 2 lines. Use Cursor key to access all parameters in each window

#### EQ

NAV4802 &amp; NAV8802

IN_1: _____	MENU: EQ
EQ#: 1	BW :0.33oct
LEVEL: + 0.00dB	Q=0.436
FREQ : 1000Hz	TYPE: PEQ

- EQ#: Selects one of the 8 available equalizer filters.
- LEVEL: Adjusts EQ level. Ranges from -30.00dB to +15.00dB in 0.25dB steps.
- FREQ: EQ center frequency. Ranges from 20 to 20,000 Hz in either 1 Hz steps or 1/36 octave steps. The frequency steps can be selected in the **Global Parameters Menu**.
- BW: EQ Bandwidth. Ranges from 0.02 to 2.50 octaves in steps of 0.01 octave steps for PEQ. The Q value is automatically shown beneath the octave value. For Lo-Shf or Hi-Shf, it is either 6 or 12dB/Oct.
- Type: Type of EQ. The types can be PEQ (parametric), Lo-Shf (Low shelving), and Hi-Shf (High shelving).

NAV240, 360

I1: _____	EQ1
EQ#: 1	

I1: _____	EQ1
LEVEL: 0.00 dB	

I1: _____	EQ1
FREQ: 1000 Hz	

I1: _____	EQ1
FRE 0.02 Q=72.13	

I1: _____	EQ1
TYPE: PEQ	

**FBX Feedback Exterminator**

NAV4802 &amp; NAV8802

NAV240, 360

**FBX**

See Section 5.6 for a complete description of how to operate the FBX Feedback Exterminator

IN\_1: \_\_\_\_\_ MENU: FBX  
 FBX#: 1 \_\_\_\_\_ FREQ: 9020 Hz  
 TYPE: FIXED (L) BW : 0.10 Oct  
 LVL : -9dB

- EQ#: Selects one of the 8 available FBX filters.
- TYPE: Choose Fixed for more gain before feedback, Dynamic for control of new feedback during the show. See section 5.5 for a complete guide to using the FBX function.
- LVL: Shows level in dB of the FBX filter (not editable).
- FREQ: Shows center frequency of the FBX filter (not editable).
- BW: Shows the width of the FBX filter (not editable).

I1: \_\_\_\_\_ FBX1  
 FBX#: 1

I1: \_\_\_\_\_ FBX1  
 TYPE: Fixed (L)

I1: \_\_\_\_\_ FBX1  
 LEVEL: -3 dB

I1: \_\_\_\_\_ FBX1  
 FREQ: OFF

I1: \_\_\_\_\_ FBX1  
 BW: 0.01 oct

**FBX-Global Parameters**

NAV4802 &amp; NAV8802

NAV240, 360

IN\_1: \_\_\_\_\_ MENU: FBX-Glob  
 LOCK : On DEPTH: 24dB  
 BYPASS: On WIDTH : 0.10  
 RSTDYN: Off SENS: 3 PERS:3

- LOCK: This refers to Fixed filters only, which by definition already are fixed in their centerpoint position. Locking prevents the filter from getting deeper. Locked is the recommended setting. Ready Mode automatically locks fixed filters.
- BYPASS: Bypasses all FBX filters on this Input channel. On indicates bypass; Off indicates FBX is active.
- RSTDYN: Reset Dynamic FBX filters. Turning to on toggles the reset function.
- DEPTH: Sets maximum depth of all FBX filters on this input channel. Range is 0 to -84dB.
- WIDTH: Sets default width of all FBX filters on this input channel. Range is 0.01 to 1.00 octave.
- SENS: Sets the Sensitivity of the FBX algorithm to the difference between music and feedback. Range is 1-5.
- PERS: Sets persistence - how long feedback can persist before a filter is set. Range is 1-5.
- Factory Defaults are recommended for Sensitivity, and Persistence setting.

I1: \_\_\_\_\_ FBXGbl  
 LOCK: On

I1: \_\_\_\_\_ FBXGbl  
 BYPASS: Off

I1: \_\_\_\_\_ FBXGbl  
 RSTDYN: Off

I1: \_\_\_\_\_ FBXGbl  
 DEPTH: 4 dB

I1: \_\_\_\_\_ FBXGbl  
 WIDTH: 0.10 oct

I1: \_\_\_\_\_ FBXGbl  
 SENSE: 2

I1: \_\_\_\_\_ FBXGbl  
 PERSIST: 2

**FBX-Mode**

NAV4802 &amp; NAV8802

IN_1: _____	MENU: FBX-Mode
SETUP MODE	: Ready

NAV240, 360

I1: _____	FBXMod
SETUP MODE:	Ready

I1: _____	FBXMod
Setup?:	<Enter>

FBX SETUP MODE
Abort: <Home>

· SETUP MODE: This screen is used to engage FBX Setup mode. Use this for setup only - not for use during the show. This step provides maximum gain before feedback. Follow on-screen instructions and raise gain slowly. **For a step-by-step guide to using the FBX see section 5.6.**

**Ducker**

NAV4802 &amp; NAV8802

IN_1: _____	MENU: Ducker
PRIORITY: 1	

NAV240, 360

Not available
---------------

Set the priority of each input on the Navigator as it relates to the Ducker function. Lower priority inputs will be attenuated as higher priority signals are present. Priorities range from 1 (highest) to 9 (lowest).

**Compressor**

NAV4802 &amp; NAV8802

IN_1: _____	MENU: Compress
THRESH : 0.0dBu	
ATTACK : 10ms	RATIO: 2:1
RELEASE: 8x (80ms)	

NAV240, 360

I1: _____	Comp
THRESH:	0.0 dBu

I1: _____	Comp
ATTACK:	0.3

I1: _____	Comp
RELEASE:	2x Atck

I1: _____	Comp
RATIO:	1:1

- THRESH: Compressor Threshold. Ranges from -20 to +20dBu in 0.5dB steps.
- ATTACK: Attack time. Ranges from 0.3 to 1ms in 0.1ms steps; from 1 to 100ms in 1ms steps.
- RELEASE: Release time. Can be set at 2X, 4X, 8X, 16X or 32X the attack time.
- RATIO: Set compression ratio, 1:1 to 40:1 (Limit).

**Bypass**

NAV4802 &amp; NAV8802

IN_1: _____	MENU: Bypass
DELAY: 0	
EQ 1 - 8: 0X000000	

NAV240, 360

I1: _____	Bypass
DELAY:	0

I1: _____	Bypass
EQ1-8:	0X000000

- DELAY: Select X using the datawheel to bypass the delay
- EQ: Select X to bypass one of 8 EQ filters on this input

**NAV240, 360**

LCD Display has only 2 lines. Use Cursor key to access all parameters in each window

**Channel Name**

NAV4802 &amp; NAV8802

NAV240, 360

IN_1: _____	MENU: Name
NAME: _____	

I1: _____	Name
NAME: _____	

· Name: Channel name. The maximum length is 6 characters. Use the datawheel to scroll through all the possible characters, and use the cursor keys to move to the next space. Once the name is created it will appear in the upper field of this window.

**5.2 OUTPUT MENUS**

Each output channel of the Navigator has a separate menu key. There are 6 menus for each output channel. The menus cycle in a linear fashion, just like the input menus. Use the Cursor keys to select a parameter to edit, and use the Data Wheel to make your edits.

**Signal**

NAV4802 &amp; NAV8802

NAV240, 360

OUT_1: _____	MENU: Signal
LEVEL: 0.00dB	
POL : +	
DELAY: 0 (000.000 ms)	

O1: _____	Signal
LEVEL: 0.00 dB	

O1: _____	Signal
POL: +	

O1: _____	Signal
DELAY: 000.000 ms	

- LEVEL: Gain, -40.00dB to +15.00dB in 0.25dB steps.
- POL: Polarity, can be normal (+) or inverted (-).
- DELAY: Delay is adjustable in 21 microsecond steps and displayed in ms, ft or m. The time unit of the delay can be changed in the **Global Parameters** menu. The maximum available delay is 650ms (80 for the NAV240, 260).

**EQ**

NAV4802 &amp; NAV8802

NAV240, 360

OUT_1: _____	MENU: EQ
EQ#: 1	BW :0.33oct
LEVEL: + 0.00dB	Q=0.436
FREQ : 1000Hz	TYPE: PEQ

O1: _____	EQ1
EQ#: 1	

O1: _____	EQ1
LEVEL: 0.00 dB	

O1: _____	EQ1
FREQ: 1000 Hz	

O1: _____	EQ1
FRE 0.02 Q=72.13	

O1: _____	EQ1
TYPE: PEQ	

- EQ#: Selects one of the 8 available Equalizer filters.
- LEVEL: EQ level. Ranges from -30.00dB to +15.00dB in 0.25dB steps.
- FREQ: EQ center frequency. Ranges from 20 to 20,000 Hz in either 1Hz steps or 1/36 octave steps. The frequency steps can be selected in the **Global Parameters** menu.
- BW: EQ Bandwidth. Ranges from 0.02 to 2.50 octaves in steps of 0.01 octave steps for PEQ. The Q value is automatically shown beneath the octave value. For Lo-Shf or Hi-Shf, it is either 6 or 12dB/Oct.
- Type: Type of EQ. The types can be parametric (PEQ), Lo-Shf (Low shelving), and Hi-Shf (High shelvin).



## Crossover

NAV4802 & NAV8802

OUT_1: _____	MENU: XOver
FTRL: Off	FTRH: Off
FRQL: 1000Hz	FRQH: 1000Hz
SLPL: 24dB	SLPH: 24dB

· FTRL: Choose the type of low frequency filter (high pass). Types can be Butterworth (Butterworth), Link-Ri (Linkwitz-Riley) or Bessel.

· FRQL: Filter cut-off frequency of low frequency crossover point (high pass). Ranges from 20 to 20,000Hz in either 1Hz steps or 1/36 octave steps. Select frequency resolution in the **Global Parameters** menu.

· SLPL: Filter Slope of low frequency crossover point (high pass). Ranges from 6 to 48dB/octave in 6dB/octave steps. If the selected Filter Type is Linkwitz Riley, the available slopes are 12 / 24 / 36 / 48 dB/octave.

· FTRH: Choose the type of high frequency filter (low pass). Types can be Butterworth (Butterworth), Link-Ri (Linkwitz-Riley) or Bessel..

· FRQH: Filter cut-off frequency of high frequency crossover point (low pass). Ranges from 20 to 20,000Hz in either 1Hz steps or 1/36 octave steps. Select frequency resolution in the **Global Parameters** menu.

· SLPH: Filter Slope of high frequency crossover point (low pass). Ranges from 6 to 48dB/octave in 6dB/octave steps. If the selected Filter Type is Linkwitz Riley, the available slopes are 12 / 24 / 36 / 48 dB/octav.

NAV240, 360

O1: _____ XOver
FTRL: Off

O1: _____ XOver
FRQL: 1000 Hz

O1: _____ XOver
SLPL: 24 dB

O1: _____ XOver
FTRH: Off

O1: _____ XOver
FRQH: 20 Hz

O1: _____ XOver
SLPH: 6 dB

### NAV240, 360

LCD Display has only 2 lines. Use Cursor key to access all parameters in each window

## Compressor

NAV4802 & NAV8802

OUT_1: _____	MENU: Compress
THRESH : 0.0dBu	
ATTACK : 10ms	RATIO: 2:1
RELEASE: 8x (80ms)	

· THRESH: Compressor Threshold. Ranges from -20 to +20dBu in 0.5dB steps.

· ATTACK: Attack time. Ranges from 0.3 to 1ms in 0.1ms steps; from 1 to 100ms in 1ms steps.

· RELEASE: Release time. Can be set at 2X, 4X, 8X, 16X or 32X the attack time.

· RATIO: Set compression ratio, 1:1 to 40:1 (Limit).

NAV240, 360

O1: _____ Comp
THRESH: 0.0 dBu

O1: _____ Comp
ATTACK: 0.3

O1: _____ Comp
RELEASE: 2x Atck

O1: _____ Comp
RATIO: 1:1

**Input Source**

NAV4802 &amp; NAV8802

NAV240, 360

OUT_1: _____	MENU: Source
In1: On	In4: Off
In2: Off	
In3: Off	

O1: _____	Source
In1: Off	

- 1, 2, 3, 4 – Input channel source for the current output channel. This is your sub-mixer for each output of the Navigator. Values range from 0.00 (Maximum level) to -40, then OFF, which mutes that input for the output you are editing.

**Channel Name**

NAV4802 &amp; NAV8802

NAV240, 360

OUT_1: _____	MENU: Name
NAME: _____	

O1: _____	Name
NAME: _____	

- Refer to the Input Menus for details on naming your output channels.

**Bypass**

NAV4802 &amp; NAV8802

NAV240, 360

OUT_1: _____	MENU: Bypass
DELAY: 0	
EQ 1 - 8: 0X000000	

O1: _____	Bypass
DELAY: 0	

O1: _____	Bypass
EQ1-8: 0X000000	

- DELAY: Select X using the datawheel to bypass the delay
- EQ: Select X to bypass one of 8 EQ filters on this output

**5.3 GLOBAL PARAMETERS MENUS**

The **Global Parameters Menus** allow you to control and change global parameters that are related to the general operation of the Navigator. Press HOME to access the Main Menu, then GLOBAL to enter the Global Parameters Menus. **All Global Menus require you to press the ENTER key to confirm the selected edit.**

**Program Recall**

NAV4802 &amp; NAV8802

NAV240, 360

GLOBAL	MENU: Recall
PROG: 1	
NAME: _____	

GLOBAL	Recall
P: 1 MAIN _____	

The Navigator has a built in non-volatile memory that can store up to 30 different program setups. A program can be recalled using this menu.

- PROG: Program Number to be recalled..
- NAME: Program Name of the program. This is read only; names can be changed in the Store menu.

## Program Store

The Navigator has a built in non-volatile memory that can store up to 30 different program setups. A program can be stored using this menu. The old program with the same program number will be replaced. Once the program is stored in the flash memory, it can be recalled at a later time, even after power down.

NAV4802 & NAV8802

NAV240, 360

GLOBAL	MENU: Store
PROG: 1	
NAME: _____	

GLOBAL	Store
P: 1	

GLOBAL	Store
NAM: _____	

- PROG: Program Number for the current data to be stored.
- NAME: Program Name, allows a maximum length of 12 characters

## Configuration

NAV4802 & NAV8802

NAV240, 360

GLOBAL	MENU: Config
MODE: None	

GLOBAL	Config
MODE: None	

- MODE - configures the mode of operation.

Mode:	Out 1	Out 2	Out 3	Out 4	Out 5	Out 6	Out 7	Out 8
None	Any	Any	Any	Any	Any	Any	Any	Any
Stereo 2-Way	In1	In1	In2	In2	Any	Any	Any	Any
Stereo 3-Way	In1	In1	In1	In2	In2	In2	Any	Any
Stereo 4-Way	In1	In1	In1	In1	In2	In2	In2	In2

The unit assigns the Input source for the corresponding outputs when the Mode of Configuration is selected. The crossover point parameters like the filter type, cut-off frequency and slope have to be configured manually in the **Xover** Menu in each Output menu.

\*Note: The configuration mode configures the input sources when selected. The user can change the source afterwards if desired. It does not keep the configuration in memory.

## Copy Parameters

NAV4802 & NAV8802

NAV240, 360

GLOBAL	MENU: Copy
SOURCE: In1	
TARGET : In1	

GLOBAL	Copy
SOURCE: In1	

GLOBAL	Copy
TARGET: In2	

Copy channel parameters from the source to the target. When the Source and Targets are both Inputs or Outputs, all audio parameters will be copied. When one of the Source or the Target is an input while the other is an output, only the Level, Polarity, Delay and EQ are copied.

- SOURCE: Channel to be copied from.
- TARGET: Channel to be copied to.

**General System Parameters**

NAV4802 &amp; NAV8802

NAV240, 360

GLOBAL	MENU: General
FREQ MODE : 36	Steps/Oct
DELAY UNIT : ms	

GLOBAL	General
FREQ MODE: 36/Oct	

GLOBAL	General
DELAY UNIT: ms	

- FREQ MODE: Selects the frequency control mode for EQ and crossover filters. The coarse adjustment is 36 steps/octave; choose All Frequencies (1 Hz resolution) for fine adjustments.
- DELAY UNIT: ms (milliseconds), ft (feet), or m (meters).

**Communications**

NAV4802 &amp; NAV8802

NAV240, 360

GLOBAL	MENU: Comm
BAUD RATE: 115200	
DEVICE # : 1	
PORT : RS232/USB	

GLOBAL	Comm
BAUD RATE: 115200	

GLOBAL	Comm
DEVICE #: 1	

- PORT: Choose control port. RS232/USB for direct connection to a computer, or CAT-5 for Ethernet.
- BAUD: Choose the baud rate to match your serial port when connecting via RS232 or USB. The values are 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200.
- DEVICE#: Assigns the device ID from 1 to 16. Assigning ID numbers is required when you are creating a network of more than one Navigator.

**Panel**

NAV4802 &amp; NAV8802

NAV240, 360

GLOBAL SETUP	MENU: Panel
PANEL MODE: Master	
# OF PANELS: 1	

GLOBAL	Panel
MODE: Master	

GLOBAL	Panel
# PANEL: 1	

Choose how your Navigator will interact with the NACRC-100 Wall Panel Remote. For a complete look at using this with your Navigator please see section XXX on pageXX

- PANEL MODE: Master or Slave. The first Navigator to be controlled with multiple wall panels should be set to Master. The next one is set to Slave. You can control a maximum of 2 Navigators with one wall panel.
- # OF PANELS: 1 to 32. Choose the number of wall panels that control this Navigator. The maximum is 32.

**Ethernet**

NAV4802 &amp; NAV8802

NAV240, 360

GLOBAL SETUP	MENU: Ethernet
IP ADDRESS : 192.168.002.240	
GATEWAY ADR : 255.255.255.255	
SUBNET MASK : 255.255.255.000	

GLOBAL	Eth-IP
:192.168.002.240	

You can set the parameters for Ethernet connections in this window. Each Navigator in a network must have a unique IP address. This adjustment is also available in the Navigator Software. See Section 6.7 of this guide for a complete explanation of creating a Navigator Network using standard Ethernet connections.

- IP ADDRESS: Unique network address of the Navigator. Number above is a good place to start.
- GATEWAY ADR: Default address of a network. Set as shown above unless your network administrator recommends another setting.
- SUBNET MASK: Limits what the Navigator can see on the network. Set as shown above.
- Cycle Power When Finished.

**I/O Mode**

NAV4802 &amp; NAV8802

NAV240, 360

GLOBAL SETUP	MENU: I/O Mode
I 12: A    I 34: A	
012: A    034: A    056: A    078: A	

Not available
---------------

For units with the “D” option for Digital I/O, only available on NAV 4802 or 8802 units. Choose the Input/Output type for each pair of inputs or outputs. A = Analog, and D = Digital.

- I12: A = Input pair 1 and 2, set to Analog, etc.
- O34: A = Output pair 3 and 4, set to Analog, etc.

**Mic Preamp**

NAV4802 &amp; NAV8802

NAV240, 360

GLOBAL SETUP	MENU: Mic Preamp
1: Mic            4: Line            7: Line	
2: Line           5: Line            8: Line	
3: Line           6: Line            P: On	

Not available - controlled with back panel switches
---

For units with the “M” option for Mic Preamp. Choose either Mic level or Line level for each input. This front-panel switching is only available on NAV4802 or 8802. NAV240 and 360 have back panel switches for this function.

- 1: Mic = Input 1 set to Mic Level
- 2: Line = Input 2 set to Line Level, etc.
- P: On = Phantom Power turned on for all inputs

**Priority Inputs**

NAV4802 &amp; NAV8802

NAV240, 360

GLOBAL SETUP	MENU: Ducker
RELEASE : 0ms	ATTENUATE: 0dB
ATTACK : 0ms	DWELL ATK : 0dB
THRESH : 0dB	DWELL RLS : 0dB

Not available
---------------

Here you set the global parameters for the Ducker function of the Navigator. Each input can have its own priority setting (see Input Menu). The settings here effect all ducking functions for each channel.

- RELEASE: Release time of gain reduction. Ranges from 0 to 504 ms
- ATTACK: Attack time of gain reduction. Ranges from 0 to 504 ms
- THRESH: Threshold at which gain reduction begins. Ranges from 0 to 90 dB
- ATTENUATE: Attenuation of the mic when gain is reduced. Ranges from 0 to 90 dB
- DWELL ATK: Time high-priority signal is above threshold before gain reduction begins on low priority mics. Ranges from 0 to 1054 ms
- DWELL RLS: Time high-priority signal is below threshold before gain reduction releases. Ranges from 0 to 1054 ms

**Security**

NAV4802 &amp; NAV8802

NAV240, 360

GLOBAL	MENU: Security
MENU : In-Signal	
LOCK : No	
PASSWORD: _____	

GLOBAL	Secure
PASSWORD: _____	

The Navigator enables the user to secure the unit and prevent undesired changes in the setup. In order to make changes to the security levels the user must enter the correct password.

- MENU - Selects the menu to be locked/unlocked. The options are:
  - In-Signal: Input Signal Menu (Level, Polarity, Delay).
  - In-EQ: Input EQ Menu.
  - In-Name: Input Channel Name Menu
  - Out-Signal: Output Signal Menu (Level, Polarity, Delay).
  - Out-EQ: Output EQ Menu.
  - Out-Xover: Output Crossover Menu.
  - Out-Limit: Output Limit Menu.
  - Out-Source: Output Source Menu.
  - Out-Name: Output Channel Name Menu.
  - Global Parameters: Global Parameters Menu
- LOCK: Engages lock (Yes) or unlock (No) for the corresponding menu.
- PASSWORD: Enter your 4-character password here. Initial password creation must be done within Navigator Remote Software. Entering the same password here initiates the lockout function. Press Enter and your Navigator front panel controls will be locked according to the menu selections you made. You can alter those selections via the front panel or through the software. NAV240 and 360 models do not allow for selective menu locking. With these all front panel functions are either locked or unlocked.

## 5.4 INPUT/OUTPUT REFERENCE GUIDE

This chart shows all the parameters and edit values for each control on each menu. Use this as your reference for ranges of all parameters in each menu.

Parameters	<<Menu>>	<<Cursor>>	Min	Max	Steps	Units
Level	Signal	LEVEL	-40	15	0.25	dB
Polarity	Signal	POL	+ / -			
Delay	Signal	DELAY	0	21,600	1	21us steps
EQ Number	EQ	EQ#	1	6	1	
EQ Level	EQ	LEVEL	-30	15	0.25	dB
EQ Frequency	EQ	FREQ	20	20,000	1	Hz
EQ Bandwidth	EQ	BW	0.02	2.5	0.01	Octave
Crossover Low	XOver	FTRL	Off / Butterworth / Linkwitz-Riley / Bessel			
Crossover Low	XOver	FRQL	20	20,000	1	Hz
Crossover Low	XOver	SLPL	6	48	6	dB/octave
Crossover High	XOver	FTRH	Off / Butterworth / Linkwitz-Riley / Bessel			
Crossover High	XOver	FRQH	20	20,000	1	Hz
Crossover High	XOver	SLPH	6	48	6	dB/octave
Limiter Threshold	Limit	THRESH	-20	20	0.5	dBu
Limiter Attack	Limit	ATTACK	0.3	100	0.1/1	ms
Limiter Release	Limit	RELEASE	2 / 4 / 8 / 16 / 32X Attack time			
Source Select	Source	1, 2, 3, 4	Off / On			
Channel Name	Ch-Name	NAME	6 characters			

## 5.5. FEEDBACK CONTROL AND PARAMETRIC EQUALIZATION

Operation of the FBX Feedback Exterminator section of the front panel of your Navigator is simple, but may require a brief explanation for those of you unfamiliar with Sabine FBX products and/or terminology. Let's begin by defining a few key terms.

### 5.5.1. Glossary of Terms

- **FEEDBACK** describes what happens when a loudspeaker disperses sound back into an amplified microphone, at a level sufficient to allow one or more frequencies to ring out of control. Feedback can occur at any frequency, but is especially painful at mid to high frequencies. The specific frequencies that feedback in a particular situation depend on the acoustics of the environment, the placement of the microphone(s) and speaker(s), the response characteristics of the sound system components, and the volume of amplification. Anyone who has operated a sound system or attended a conference or a concert is familiar with feedback and its unpleasant consequences!
- A **PARAMETRIC EQUALIZER** allows the user to precisely specify three critical values that determine an equalizer's characteristics: the center frequency of the EQ band that is boosted or cut (measured in Hertz), the amount of boost or cut imposed at the center point (measured in dB), and the width of the bell-curve shaped frequency band that is affected (typically measured in octaves).
- An **FBX FILTER** is essentially an automatically placed, narrowly attenuated parametric filter, with the center point of its narrow cut tuned to a precise frequency that feeds back when a sound system amplifies one or more microphones to a sufficient volume. The Navigator will automatically place up to 8 FBX filters in the signal path, corresponding to 8 distinct frequencies of feedback.
- A **FIXED FBX FILTER** will not move from the original set frequency of the filter. Once it sets itself, it remains at the same frequency. The system's gain before feedback is limited primarily by the number of fixed filters; i.e., increasing the number of fixed filters increases the system's gain before feedback. However, unless it is **LOCKED**, a **FIXED FILTER** may move its notch deeper without changing frequency. Fixed filters are typically set by turning up system gain to the point of feedback prior to sound check or performance, and they represent the "first layer" of feedback protection.
- A **DYNAMIC FBX FILTER** acts like a Fixed filter, until all available FBX filters (Fixed or Dynamic) are in use and a new frequency begins to feedback. When this happens, whichever Dynamic filter was set earliest in the performance will drop its original frequency and move to the new one. Dynamic filters are especially useful with mobile or wireless microphones (where feedback frequencies may change due to microphone repositioning) and represent the "second layer" of feedback protection. Note that both Fixed and Dynamic filters can be set while music is playing (except when in Setup Mode). One of the distinguishing properties of the Sabine FBX algorithm is its ability to distinguish music (or speech, or other sounds) from feedback.
- A **LOCKED FBX FILTER** is a Fixed filter locked in place; i.e., it cannot get any deeper or change its frequency. Locked fixed filters are no longer adaptive. Locking Fixed filters ensures your first layer of feedback protection is always in place -- highly recommended.
- **FILTER WIDTH** generally refers to the width (measured in octaves, or fractions thereof) of a filter, including graphic EQ filters, parametric filters, and FBX filters. More specifically, width is defined by determining the outer frequencies (surrounding the filter center point) that are altered  $\pm 3$  dB when the filter is imposed.
- **CONSTANT Q** filters are filters whose widths remain constant regardless of the amount of boost or attenuation imposed by the filters. Constant Q feedback control filters are defined several different ways in our industry. Some companies claim their filters are Constant Q because they do not widen when measured at the deepest part of the filter. Under this meaningless definition, every feedback filter ever made is Constant Q. However, the top end of these filters get wider and wider as the filter gets deeper. In other words, they take out more of the program as the filter gets deeper. Sabine Constant Q filters uses the most stringent and meaningful definition. Our filters never get wider than the specified width when measured at the top of the filter (-3 dB point). Our filters never remove more of the program as the filter gets deeper.
- **FBX Setup Mode** refers to Sabine's exceptionally fast method of placing FBX filters during sound system setup. Think of Setup mode as your key to achieving one of the main benefits of the FBX: getting more gain before feedback. In Setup the FBX is very sensitive so **do not talk into the mics during setup**, and try to keep room noise to a minimum. Setup is designed to allow feedback to occur at lower input levels, and it imposes a strong limiter on the feedback output as it occurs. The net result is that you are able to ring out feedback more quickly, and at a much quieter level!

**NOTE: MAKE SURE Setup Mode IS OFF and Ready Mode IS ENGAGED WHEN YOU USE THE NAVIGATOR OR YOUR AUDIO SIGNAL QUALITY MAY SUFFER!**

## 5.6. FBX OPERATING INSTRUCTIONS

Follow these steps to obtain the maximum gain before feedback, with minimal or no loss in the tonal



quality of your program. You should always setup one channel at a time by turning down the other channels of the mixer or power amplifiers.

### STEP ONE: EQUIPMENT SETUP

Set up your sound system and position all the speakers and microphones you anticipate using. When possible, avoid placing microphones directly in front of speakers. Patch the Navigator into the system (refer to section Three for installation configurations). Set your levels for nominal performance but avoid raising the gain enough to induce feedback. If you are using a graphic EQ, adjust only for the desired tonal qualities, but **DO NOT NOTCH FOR FEEDBACK**. If there is any equipment in the signal path that incorporates a noise gate function, you **MUST DISENGAGE** these noise gates prior to the setup procedure. You may reengage them upon setup conclusion. For best results setup your FBX on one input channel at a time. You can mute the audio in the other input channels.

### STEP TWO: CHOOSE YOUR FILTER TYPES and REMOVE BYPASS

The default filter setting for your Navigator are 6 FBX Fixed Filters and 2 FBX Dynamic Filters per input channel. You may change that mix of filters, and this should be done before you enter Setup Mode. You can always alter the mix of FBX filters and repeat the Setup procedure. To change filter types, choose the FBX Menu in the Input Channel you are working on.

The factory default for the FBX is BYPASS: On, which means the FBX section is Bypassed. Before you start FBX Setup, select the input channel you are working on, then go to the FBX Global Menu. Set the BYPASS to Off, meaning the FBX section is now active.

#### FBX Bypass

Be sure and take the FBX section out of Bypass before setup! Do this in the FBX Global Menu.

### STEP THREE: ENGAGE SETUP MODE - RESET FILTERS

Choose an input channel and select the FBX-Mode Menu. Using the datawheel select "Setup" in the SETUP MODE field, then press ENTER. Press ENTER again to confirm Setup Mode. **Setup mode clears all Fixed & Dynamic filters. Do not use Setup mode during your performance.**

```
IN_1: _____ MENU: FBX-Mode
SETUP MODE : Setup

Press <Enter> to Proceed
```

Press enter to begin Setup -  
NAV4802, 8802 (above), NAV240,360 (below)

```
I1: _____ FBXMod
Setup?: <Enter>
```

```
*****SETTING UP FBX*****
      Quiet Please
      Raise Gain Slowly
      Press <Exit> to End
```

Raise gain slowly; Setup automatically ends or  
got to Ready mode any time by pressing Exit -  
NAV4802, 8802 (above), NAV240,360 (below)

```
FBX SETUP MODE
Abort: <Exit>
```

### STEP FOUR: RAISE MASTER GAIN

Make sure your power amplifier is turned up and your microphones are turned on. Slowly raise the master gain of your mixer (or the submix for this input channel of the Navigator) until the first feedback begins. The FBX will quickly remove the feedback by setting the first filter. Continue to raise the gain slowly. Try to avoid making two or more frequencies feed back at the same time, which sometimes happens if the gain is raised too quickly. As new frequencies feed back, new filters will be placed. (Note: sometimes the same frequency will feed back a second time, and an earlier filter will notch more deeply.)

Continue raising the gain. Setup mode will end and Ready mode will be engaged in one of two ways:

1. All of the Fixed filters and at least the first Dynamic filter are set. This will automatically turn **Setup Mode** off and the FBX Menu window will be displayed. At this point **STOP RAISING THE GAIN!**
2. You've set as many filters as you need or want, even though you haven't used them all. Press EXIT to prevent any more Fixed filters from setting, or any of the set Fixed filters from notching more deeply. Pressing EXIT exits **Setup Mode** and the FBX Menu window will be displayed.

You are now ready to begin your program!

NAV4802 &amp; NAV8802

NAV240, 360

IN_1: _____	MENU: FBX
EQ#: 1	FREQ: 9020 Hz
TYPE: FIXED (L) BW : 0.10 Oct	
LVL : -9dB	

I1: _____	FBX1
FREQ: 9020	

**See the results:** In the FBX Menu you can view the parameters of all your FBX Filters. Scroll through all the filters in the FBX# field. You may edit the type of filter, but not the level (LVL), width (BW), or frequency (FREQ). You may want to create parametric filters based on the results of your FBX Setup, then repeat the Setup procedure to maximize system gain.

### 5.6.1. FBX Setup Mode Cautions & Alternate Setup Procedure

Setup Mode is designed to allow fast and quiet feedback elimination during setup. Setup Mode should **ONLY** be used for pre-performance setup. **DO NOT USE Setup Mode DURING A PERFORMANCE!** This will produce distorted audio and set filters on music or audio program. Setup Mode also may not work well during setup in a very noisy environment. To speed up feedback elimination, Setup relaxes the FBX criteria for distinguishing “good” audio from feedback and places filters more readily. If the environment is noisy, there is a greater likelihood of placing a filter on audio that is not feedback.

If you are working in a noisy environment you can still get the benefit of the Setup procedure, which is more gain before feedback. Instead of starting in the FBX Mode Menu, begin in the FBX Global Menu. This procedure will still eliminate feedback very quickly, though not as quickly as Setup Mode, and without reducing the volume of the feedback before it is filtered out.

1. Change the LOCK setting to Off. Now the Fixed filters are available to react to feedback.
2. Follow Step Four of the Setup procedure outlined above -- raise the gain for this input channel.
3. Continue raising the gain until you achieve the gain before feedback you require, or you set all the fixed filters. You can see the results of this procedure in the FBX Menu (shown above).
4. **VERY IMPORTANT:** Go back to the FBX Global Menu and set LOCK to On. This will lock the fixed filters and prevent them from going any deeper. If you use the factory default settings you will still have two dynamic filters available for automatic feedback control during the program.

Whether or not Setup Mode is used, the end result of setting up FBX filters should be identical. Your sound system will have clearer, louder, feedback-free sound.

### 5.6.2. FBX Feedback Exterminator - Global Parameters

A unique feature of the FBX Feedback Exterminator is the ability to adjust the way the algorithm reacts to feedback. Unlike other feedback controllers, you can create and save your own customized versions of the FBX.

See section **5.1 Input Menus** for instructions on using the Global parameters of the FBX.

**Sensitivity** and **Persistence** are controls that allow the speed and analysis of the FBX algorithm to match the type of audio program. Some audio programs, notably certain types of classical music, produce occasional waveforms that are difficult to distinguish from acoustic feedback. The factory default Sensitivity and Persistence values should work in almost all conditions; however, you may change them if necessary to prevent the possibility of triggering a false filter, or to more quickly set the FBX filters. There is a trade-off between speed of filter placement and how carefully the filter is placed. More demanding audio sources (that is, program material with musical content that is similar to feedback, like flutes and organs) may require higher Sensitivity & Persistence settings, which will slightly slow down the speed of filter placement, but decrease any possibility of mistaking program audio for feedback. Lower settings are recommended when you need faster reaction during speech-only programs.

## Section Six: Using Navigator Remote Software

The Navigators are designed with easy-to-use front panel controls. You can experience the full capability of the Navigator by using the Navigator Remote Software, which opens up a whole new level of programmability. With the software you get increased storage capacity -- save an unlimited number of programs as files, transfer files from one unit to another, and download and upload an entire set of programs to your Navigator. You can also view and edit every function very quickly and arrange various functions on screen to suit your needs. These setups or screensets can be saved and recalled.

All Navigator models come equipped with the hardware and software necessary to run the units via remote control from a Windows-equipped computer. Your unit should include one CD ROM that includes the Navigator Software and the Navigator Upgrade Wizard for future upgrades of your firmware.

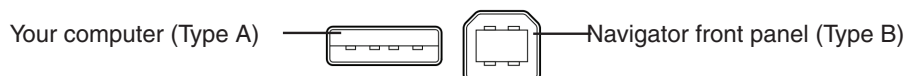
### 6.1. SYSTEM REQUIREMENTS AND RECOMMENDATIONS

1. PC computer equipped with Pentium processor 400 MHz or faster and hard disc with at least 20 MB of available space for program files.
2. Windows 2000 or higher and SVGA or greater resolution graphic card and monitor.
3. One COM port for RS232 or USB serial connection, with a 16550 or faster UART chip.

### 6.2. CONNECTIONS

**Connection via RS232 serial port** if your computer has a 9-pin COM port. Use a standard 9-pin male to standard 9-pin female RS-232 connector, available from most computer stores. For connecting multiple Navigators you will need to have the NAV4802 or 8802 versions which include the built-in Ethernet interface for use with a network switch/hub, or use a separate COM port for each Navigator. Connect the computer's COM port to the front panel Navigator RS-232 jack. **Do not use any connectors that are wired for a null modem.**

**Connection via USB port** is easy. Using a standard USB cable (Type A to Type B connector as shown below) connect the Navigator's front panel USB port to your computer's USB port. USB drivers are automatically installed when you install the Navigator software.



### TECH TIPS

Try these tips if you are having difficulty connecting your Navigator unit(s) to a Windows PC.

1. **Software Version.** Make sure the software version installed in your computer is compatible with the firmware version of your Navigator. Read the release notes at [www.Sabine.com](http://www.Sabine.com).
2. **Check cable.** For RS232 you need a serial 9-pin, not a null modem.
3. **COM Port.** Make sure the COM Port selected is correct. If not you may get an "Invalid Port" message when running the software. Click OK and then correct the port setting. You may have to restart the software. Also make sure no other serial devices are using that COM port.
4. **Find the COM when using USB.** The driver for the Navigator's USB port is installed when you install the Navigator software. USB COM ports are assigned dynamically by your computer, so you will need to find out which COM port is being used by your USB-connected Navigator.
  - a. With the power on connect the Navigator to your computer using a USB cable. You will see a message in your System Tray indicating the new USB device has been found.
  - b. In Windows, click **Start** and select **Settings, Control Panel**, then double click **System**.
  - c. Click on **Hardware, Device Manager** and open up **Ports (COM & LPT)**.
  - d. You will see the USB driver assigned to one of the COM ports. Use this COM port number when setting up the connection in the Navigator software (Step 4 on the next page).
5. **Refresh your COM Ports.** This is a good choice if you are having trouble connecting. In Windows, click **Start** and select **Settings, Control Panel**, then double click **System**. Click on **Hardware, Device Manager** and open up **Ports (COM & LPT)**. Right click the **COM Port** for your Navigator and select **Remove** (or **Uninstall**). Your computer will verify your intent and then reboot. As it reboots, it will rebuild your COM Port file. This will clean out previous settings for devices no longer attached to your computer and may allow the Navigator software to locate your unit(s).

**NOTE: COM Port Properties & Settings** (Bits per second, Data bits, Parity, Stop bits & Flow control) are controlled by the Navigator Software and need not be adjusted.

### 6.3. INSTALLING AND USING THE SOFTWARE

Follow the on screen instructions for installing the Sabine Remote Control Software for the Navigator. If you are using the Navigator in a network see Section 6.7 for details.

After the installation you should have a Navigator software icon on your desktop. We also suggest you install the Navigator Upgrade Wizard software. This will come in handy when you want to upgrade the firmware in your Navigator.

#### Connecting to your Navigator:

1. First you need to setup the Navigator's front panel settings.

**For connecting via RS232 or USB:** Press the Global button and then the >Menu key to get to the Comm Menu. The port should be RS232/USB; the baud rate should be 115200; the device number should be #1.

**For connecting via Ethernet:** Press the Global button and then the >Menu key to get to the Comm Menu. The port should be CAT-5; the baud rate should be 115200; the device number should be unique in each Navigator within your Navigator network. Start with #1 and number them sequentially.

2. Patch the serial connection to your computer using a standard 9-pin RS232 serial cable or USB cable and run the Navigator Software. If you are using an Ethernet connection patch your Ethernet cable from your network switch to the connector on the back of the Navigator. For more information on Ethernet connections, see section 6.7.
3. The opening screen allows you to choose the Live Mode for connecting to the Navigator or Design Mode for offline editing while not connected to a Navigator. Choose Live Mode to connect.
4. In the Connection Setup screen choose your comm port (RS232/USB) or IP numbers (network) for the device number you are using (device numbers can be changed in the Navigator unit in the **Global Parameters: General** menu on the front panel). For connecting to one Navigator select Device 1, and select RS232/USB. For more about connecting to a Navigator Network, see section 6.7.

**NOTE: If you are using USB as your connection please read the Tech Tip on the preceding page for important information on finding the correct COM port for your USB connection.**

5. With the proper COM port (or IP numbers) selected to which you patched your Navigator (usually com 1 or 2) click the "Connect!" button. **Your unit is connected when the System Status display on the upper left of the main screen shows "Up Sync OK" or "Link OK."** Refer to the illustrations on the following page for a look at the connection status screens.
6. If you have any trouble connecting, see the Tech Tip on this and the previous page.

Once you are connected you can proceed to use all the powerful features of the Navigator. For a basic explanation of all controls on the main screen, please see the following page.

### 6.4 UPGRADING NAVIGATOR FIRMWARE AND SOFTWARE

The firmware is the internal operating system of your Navigator unit. Software is the program you install on your computer to control the Navigator. Your Navigator CD includes the **Navigator Upgrade Wizard** program. You will use this program to upgrade the firmware in your unit. You can do this any time in order to get any recent improvements or added features.

Here is the procedure for upgrading your firmware.

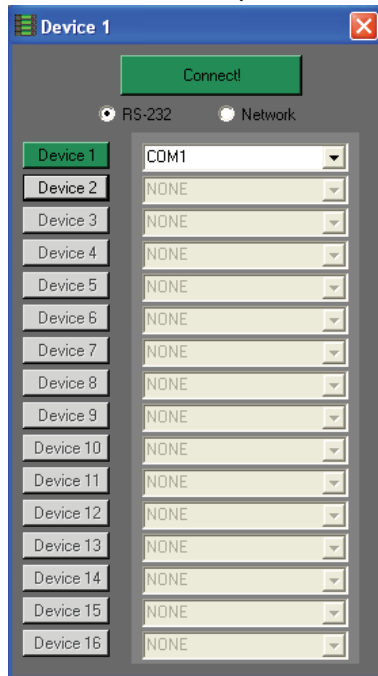
1. Use your browser and visit [www.Sabine.com](http://www.Sabine.com) and choose Professional Audio Products. Click to the Navigator page, choose Firmware Upgrades, and download the latest firmware. You can save the file anywhere on your computer, but make a note of it!
2. Run the Navigator Upgrade Wizard and follow the on-screen instructions. You will be asked to choose the firmware file, and here you will point to the file you downloaded from Sabine.com.
3. Continue with the on-screen instructions and you will complete the firmware upgrade.

## 6.5. NAVIGATOR REMOTE CONTROL SCREENS

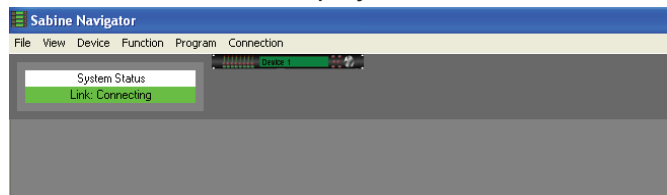
### Connection Screens

These screens are used for making the software connection to your Navigator in Live Mode. See section 6.3 for more information on connecting your Navigator.

Connection Setup Screen

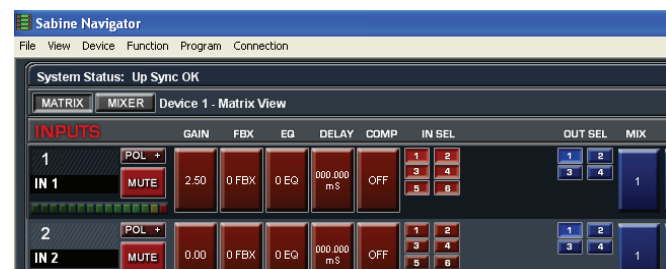


Connection Status Displays



1. The green area on this screen says “Connecting,” which indicates your computer and the Navigator establishing the control connection.

2. When the connection is successful you will see the message “Up Sync OK” (shown below) and then “Link OK.”



### Main Screens

There are two ways to view the main screen: Mixer or Matrix, as shown on the following page.

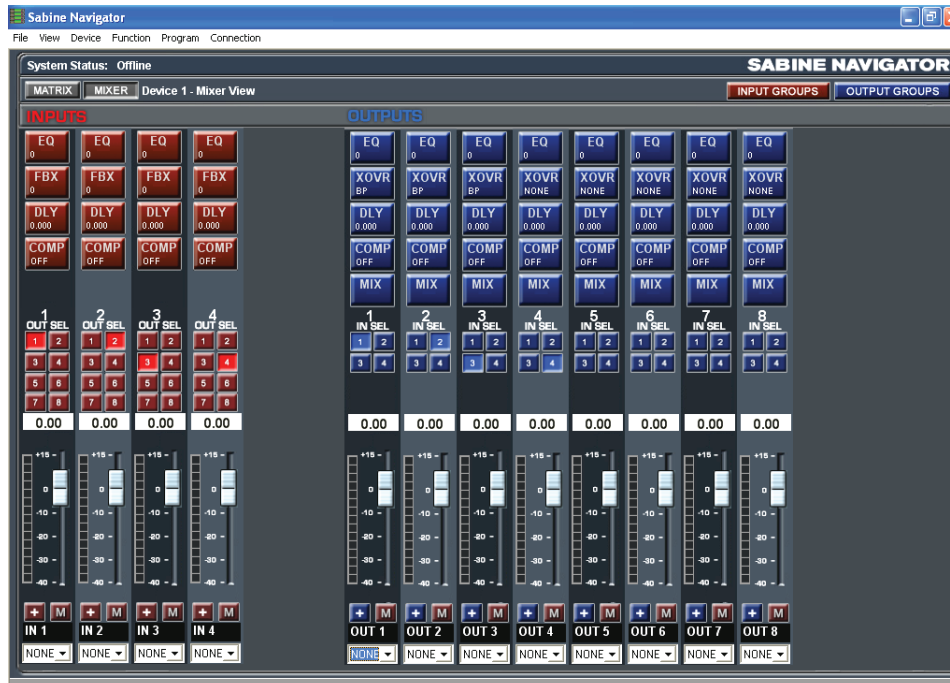
#### Guide to Main Screen Menus:

- **File** (Open, Save, Open Setup, Save Setup, New Setup, Exit): Open and Save refer to the .NDAT files which are used to store and recall parameters of the Navigator on your computer. These are equivalent to Programs, which are stored in the Navigator. Setup files are used to save other parameters. Think of Setups as your screen sets and network settings. Custom desktop arrangements can be saved and recalled. Links between units are also saved in Setups (.XST files). See section 6.6 Saving Your Work for a complete explanation.
- **View**: Displays the values for every parameter in the Navigator. You can print these from here, too.
- **Device**: Choose which Navigator to control when connected to a Navigator Network.
- **Function**: (Link, Copy, Reset All, Security, Device Name, Preferences) Link opens the screen where you can establish multiple link groups and link any parameter across any number of Navigators. Copy opens a screen that allows for flexible copying of any parameter to any Navigator. The Security screen provides for password creation and selection of which front-panel menus will be locked when using a password. Device Name is just that, and Preferences allows for default units for delay, EQ bandwidth, and temperature.
- **Program**: From here you can recall or save a Program into the memory of the Navigator (rather than as a file on your computer). All programs stored within your Navigator can be transferred to your PC using Upload All to PC. You can also transfer the files stored on your computer to the Navigator as programs using Download All to Device. See section 6.6 Saving Your Work for a complete explanation.
- **Connection**: Setup allows you to choose how to connect to one or multiple Navigators. This window is also displayed when you choose Live Mode from the welcome screen. Connect to the Navigator via RS232 or USB as well as Ethernet (NAV4802 or 8802 only).



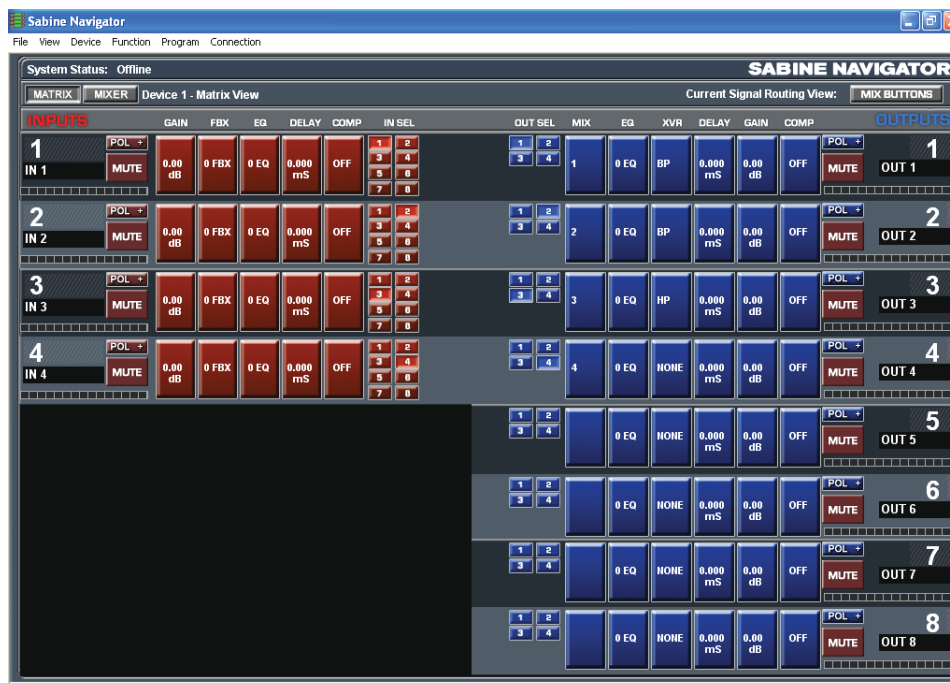
## Main Screen - Mixer View

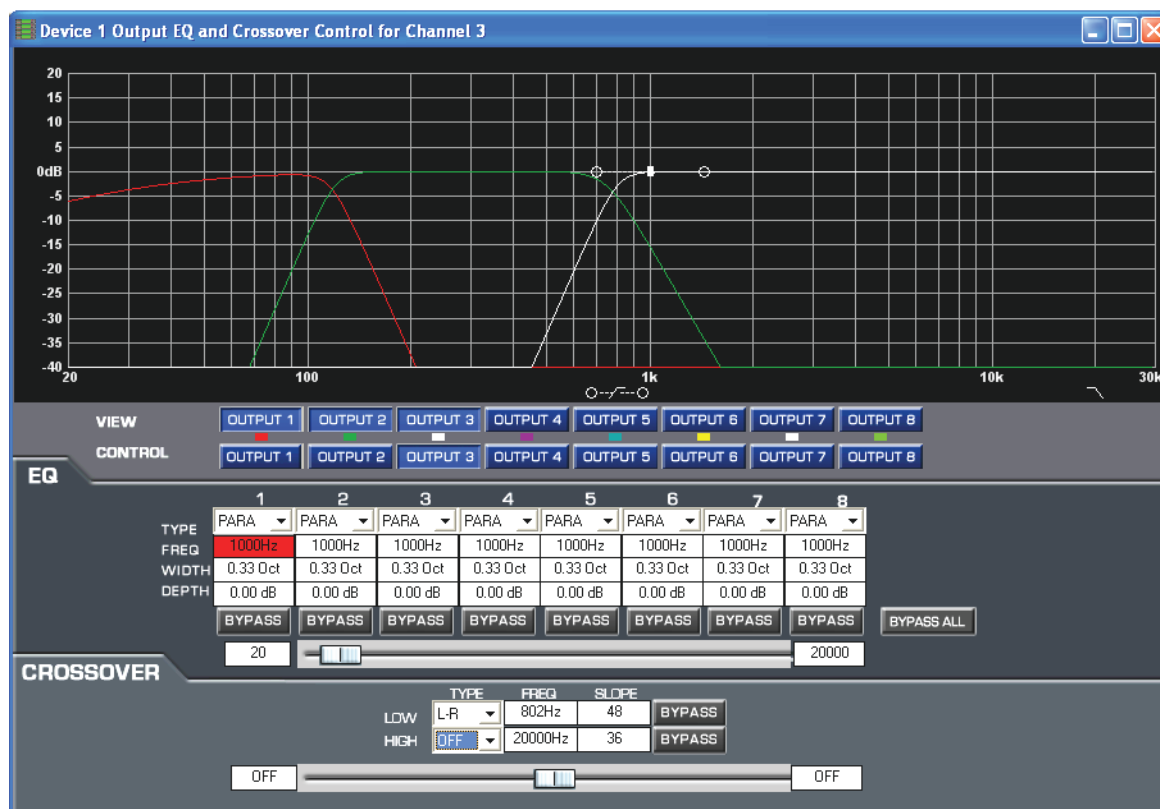
This view allows you to work with the Navigator processing in a traditional mixer view. Each input and output has its own set of processing. Your inputs and outputs also have select buttons for routing - just like a mixer. Set up your groups using the buttons at upper right - each group can be named and can have its own set of linked functions.



## Main Screen - Matrix View

This view gives you a “processor block” format for working with your Navigator. The features are the same as in Mixer View. With this screen you can get a sense of the routing and signal flow of your Navigators.





*This is one of the most commonly used screens. Controls for all other screens work in a similar way.*

### Guide to Crossover Screen Controls:

- **View:** Use these buttons to choose which Output graph you will view. You can view multiple output response curves. In this example Outputs 1, 2, and 3 are shown.
- **Control:** Use these buttons to choose which Output you will edit using the controls below the graph area. You can only control one output at a time. In this example we are controlling Output 2.
- **EQ Type:** Choose between Parametric, Low Shelf, and High Shelf using the pull-down menu. You must choose a filter type before any editing.
- **EQ Freq.:** Set the frequency of the filter center points by typing in a number or using the Slider tool. Note that the scale for their Slider tool is dynamic - when you choose Frequency the scale displays Hz.
- **EQ Width:** Set the bandwidth of each filter by typing a number into the field or using the Slider tool. Remember to select the field before using the Slider, which shows fractions of an octave in the scale.
- **EQ Depth:** Set the EQ filter depth (or level) by typing a number into the field or using the Slider tool, which shows level setting in dB.
- **Crossover Type:** Sets the type of filter you will use for each of the crossover filters (low or high) in the selected output. Use the pull-down menu to choose the type -- your first step before any other editing of the crossover.
- **Crossover Freq.:** Set the frequency at which the filter roll-off begins typing in a value or using the Slider tool. Choose the Freq field first and you will see the Slider's scale display the range of values at either end of the Slider. You can also edit the filter frequency by grabbing the Filter Handle with your mouse and dragging it along the bottom of the graph display.
- **Crossover Slope:** Set the slope of the filter by typing in a number or using the Slider tool. You can also edit the slope dragging the circles that flank the Filter Handle. You will see the slope change as you adjust these handles.

## 6.6. SAVING YOUR WORK: NAVIGATOR FILES AND PROGRAMS

Your Navigator provides several ways of saving and recalling parameters, and these are useful for preserving your work. We use the terms Program and File to distinguish where the information is stored. Using the Navigator Software gives you access to both the Programs and the Files. If you are operating the Navigator from the front panel you only have access to the programs.

1. **Programs:** These are saved and recalled from the front-panel of the Navigator. These are stored in the Navigator's internal memory, and there are 30 possible programs, or presets. Please see section 5.3 for the instructions on how to Save, Name, and Recall these internal programs from the front panel of the Navigator. You may also recall and save these Navigator-based programs from within the Navigator software by choosing the Program menu. Remember, these programs are stored in the Navigator. It is possible to transfer these programs as a group from the Navigator to your computer, or from the computer to the Navigator. See the **NLT Files** section below.
2. **Files:** These saved and recalled on your computer, just like any other file stored on your hard drive. Using your computer as a platform gives you unlimited memory storage of Navigator files. There are **three types of files** associated with the Navigator:

**NDAT files:** These files are the equivalent of one of the 30 programs that can be stored within the Navigator, except in this case they are stored on your computer. All parameters for one Navigator are stored in an .NDAT file. You can store as many of these as you need on your PC. These are accessed using **Open File** or **Save File** from the File menu in the Navigator software. If you are working in the Navigator software and you would like to save your work directly into the Navigator as a program (you must be connected in Live Mode to do this) choose **Recall** or **Save** from the Program menu in the software.

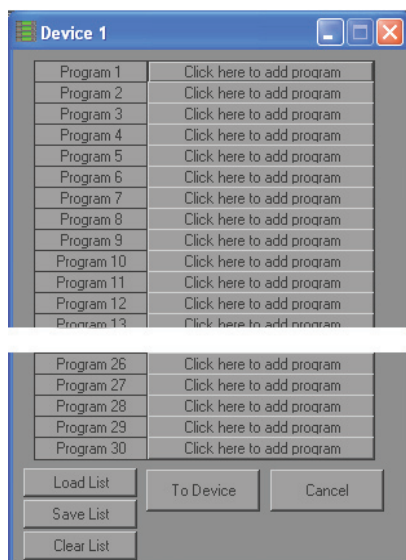
**NLT files:** These files store a listing of 30 Navigator programs. Store and recall these using the Download and Upload functions in Program menu of the Navigator software. Think of these files as a way to store all 30 programs of a Navigator in one place. This can be handy if you need to make a backup of everything stored within the Navigator. Or you may want to categorize your programs according to applications. These can be downloaded to the Navigator all at once using NLT files. Use the upload function to transfer the 30 programs from the Navigator to your PC. Think of it this way: uploading copies Programs and saves them as Files on your computer. The default location for these files is the **C:\Program Files\Sabine\Sabine Navigator** directory on your PC. Here are the step by step procedures for uploading and downloading.

**Upload All To PC:** Choose this from the Program Menu. This action overwrites previous uploads - you will get a warning asking you to confirm. If you want keep previously uploaded programs you should rename the files in the Sabine Navigator directory. The upload process creates 30 files, with default names Program 1.ndat, Program 2.ndat, etc.

**Download All to Device:** Choose this from the Program menu. You will see a screen that lists all the programs, from 1 to 30. Next to each Program is a button that allows you to load a Navigator file (NDAT) into that program number. Go ahead and load up to 30 files. This is a good way to get your programs in the order you need them in the Navigator. Once you have loaded these files into as many programs as you need, its time to save this list as an **NLT file**. Choose Save List. When you want to recall an NLT file you already made, choose Load List. If you want to start a fresh list, choose Clear List.

If you like the current list of files and you want to transfer them to the Navigator, choose **To Device**. This will take up to 30 minutes, and it will load these NDAT files as programs into the Navigator. This overwrites the Navigator's programs, so be sure you are ready to do this.

**XST files:** These Connection Setup files are for storing and recalling computer connection information. This file stores all your IP addresses and comm port selections. You can create and save these files with various connection schemes, for connecting to a single Navigator or a group of networked Navigators. Access these by choosing Setup from the Connection menu.



Download All to Device Screen



## 6.7. CREATING A NAVIGATOR NETWORK (NAV4802 AND NAV8802 ONLY)

### Ethernet connection instructions Navigators

Your NAV4802 and NAV8802 Navigators can be controlled through a standard Ethernet: connection. This option allows for control of up to 16 Navigators in one session of Navigator Remote Software.

There are three main procedures for creating your Navigator network. The first is patching your hardware, the second is assigning IP addresses to the Navigators, and the third is connecting your network using the Navigator software. You only have assign the IP addresses once. From then on you will simply choose Connect and you will be controlling your network.

### Hardware and Connections

1. **Network Switch:** In order to create your Navigator network you will need a network switch. This device comes in a variety of configurations. Choose one that has enough ports to accommodate all your Navigators plus the computer you will use for control. The maximum number of ports you will need is 17. Many companies offer switches, including NetGear, D-Link, 3Comm, Belkin, and Cisco.

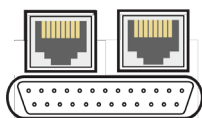
2. **Navigators:** Press the System key on the front panel and scroll through the menus to the General Menu. Choose the Port parameter and change it to CAT-5.

GLOBAL	MENU: Comm
BAUD RATE: 115200	
DEVICE # : 1	
PORT : RS232/USB	

*Front panel LCD showing correct port setting*

3. **Ethernet cables:** Connect your computer's network card to a port on the switch with a standard Ethernet cable (RJ45 connectors). Connect each Navigator's network connection to a port on the switch using standard Ethernet cables.

### Assign Navigator IP addresses using Navigator Remote Software

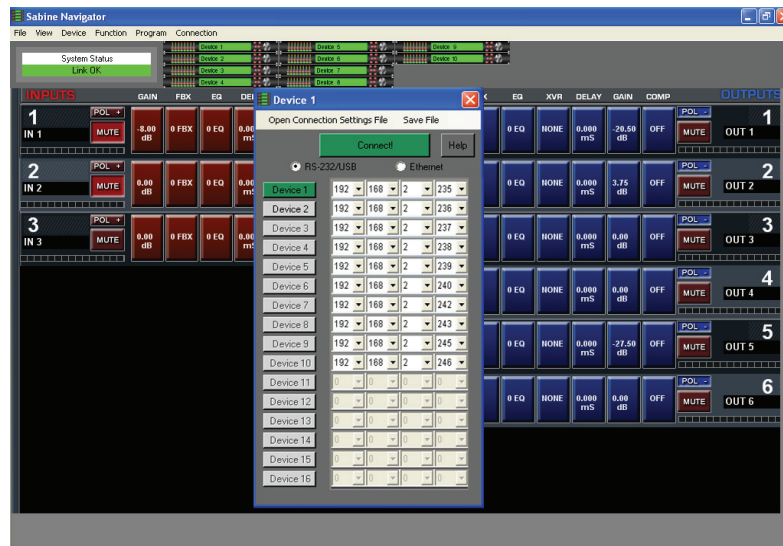


*If the Ethernet and Wall Panel connectors are pointing in the same direction on the back panel of your Navigator, as shown at left, or if you have a blank front panel unit, then follow these instructions for assigning IP numbers. If the connectors point in the opposite direction, see the previous section for instructions on assigning IP numbers.*

To set up an Ethernet connection on a newer Navigator, or one with a blank front panel, the Ethernet address must first be programmed into the unit using the RS232/USB connection. To do this, use the remote control software to connect via RS232/USB, then go to the Function menu and select Ethernet Settings. In the dialog that appears (shown at right), enter your preferred Ethernet settings for IP address, gateway, and subnet mask (the MAC address is read-only). Click 'Apply Settings' and wait for the hourglass cursor to change back into the normal pointer, indicating that the settings have been programmed into your Navigator. Cycle power on the Navigator.

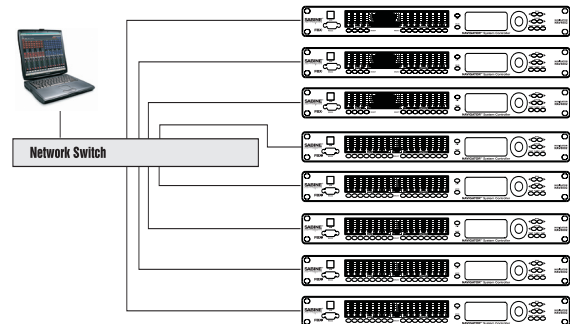
### Run Navigator Software and Connect to your Network

Exit the Navigator software, and turn off the Navigator. Turn the Navigator on, and restart the software. Choose Live Mode, then Ethernet as your connection type, and enter the IP numbers you programmed into the unit. The software will recognize these from now on, and you can also save these in a separate file: choose Save File from the menu in the Connections Setup window. See the illustration of this window on the following page.



Main screen in Navigator Software, showing Connection window with IP addresses assigned and 10 devices present. Note System Status at upper left shows the units are already connected.

Hardware connections for a Navigator Network





## Section Seven: Using Navigator Optional Hardware and Software Features

### 7.1. Controlling Options on Blank Front Panel Units

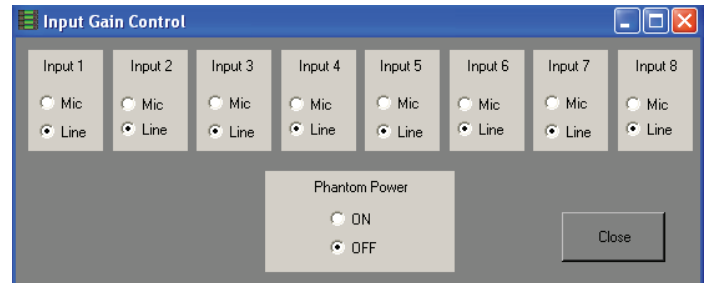
#### Microphone Preamp (M Option)

If your Navigator has this option installed you will control this function in one of two ways:

NAV240, or 360, active or blank front panel: There are up/down push-button switches on the back panel for setting mic or line level for each input.

NAV4802, 8802, active or blank front panel: You will need to use the Navigator Remote Control software to control these switches. Choose "Mic Preamps" from the Function menu.

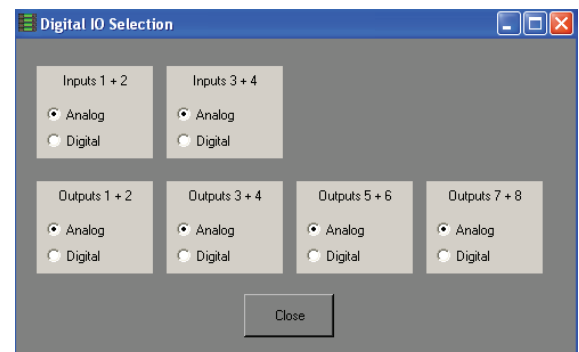
To access the front panel controls for Mic/Line switching press the Global button and scroll using the Menu keys to the "Mic Preamp" menu (see section - 5.3 Global Parameters Menus).



#### Digital I/O (D Option)

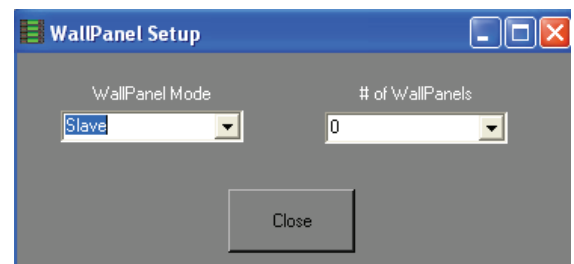
Navigators with a D in the part number have the optional Digital I/O installed. This option is only available with the 4802 and 8802 series units. Controls for the Digital I/O appear as menu items in both the front panel and the remote control software. Note that you can mix analog and digital inputs and outputs on your Navigator.

To access the front panel controls for the digital I/O press the Global button and scroll using the Menu keys to the "I/O Mode" menu (see section - 5.3 Global Parameters Menus).



#### Wall Panel Remote Ready (R Option)

All Navigators can have this option added, and it appears as an R in the part number. This option allows you to control your Navigator with the NAVRC-100 Wall Panel Controller, which must be purchased separately. As in the Digital I/O, controls for the Wall Panel connection appear in both the front panel and the remote control software.



Setting the wall panel involves choosing the mode for the Navigator and setting the total number of wall panels that will control this Navigator. See the following section of this operating guide for a complete explanation of this procedure.

To access the front panel controls for the digital I/O press the Global button and scroll using the Menu keys to the "Panel" menu (see section - 5.3 Global Parameters Menus).

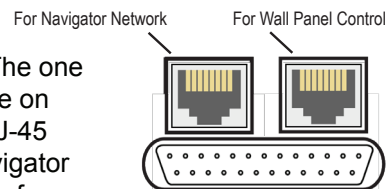
## Section Seven: Using Navigator Optional Hardware and Software Features

### 7.2. Wall-Mounted Remote Control Panel (R Option)

#### Connecting the Navigator

Your Navigator is equipped with two RJ-45 connectors on the back panel. The one on the left (facing the back of the unit) is the Ethernet connector and the one on the right is the wall panel connector. Standard CAT-5 Ethernet cable with RJ-45 connectors is used to connect the wall panel controller to this jack. The Navigator supplies power to the wall panel controller via the Ethernet cable. Run cable from the Navigator's location to the wall panel location using industry-standard practices.

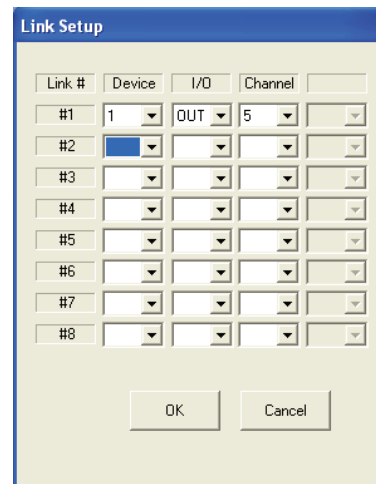
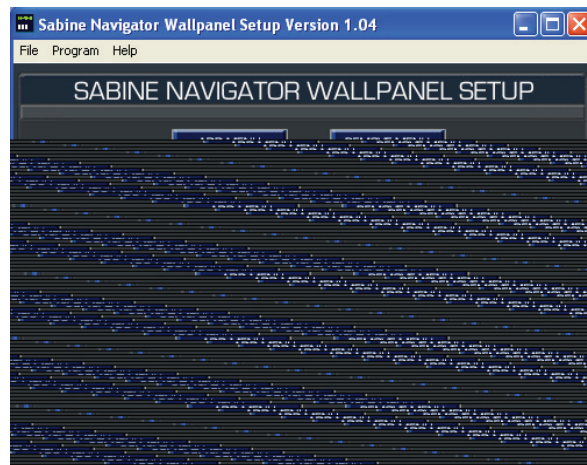
The maximum cable length from one wall panel to a Navigator is 200 feet. Do not install the wall panel yet - you have to program it first.



#### Programming the Wall Panel - Software Setup

Using the Wall Panel Setup Software you can build custom menus that will appear on the controller. In this way you can send specific control commands to the connected Navigator. For example, you can set up a menu that allows you to mute or unmute all of the output channels, or allows you to change the gain on one or more channels. A total of 32 menus can be programmed into the wall controller. Before installing the NAVRC-100 wall panel controller you will need to program it for use in your application.

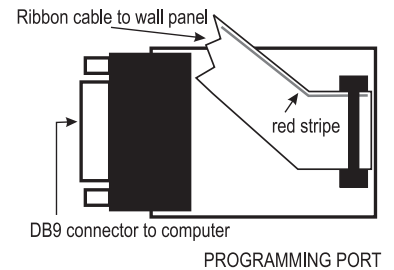
1. **Install the Navigator Wall Panel Setup Software:** There is a program on the CD-ROM that came with your Navigator or with the NAVRC-100 that must be installed on your computer in order to setup the wall panel controller. Find and run the installation program here: CD root\Navigator\Wallpanel Setup\Setup.exe. After running the installer, there will be an icon on your desktop labeled "Sabine Wall panel Setup".
2. To get started, double-click the "Sabine Wall Panel Setup" icon on your desktop.
3. Begin by clicking the **"Add Menu"** button. This creates a blank menu which you will edit to contain the commands you need. In the "LCD Line 1" box type in a name (up to 16 characters) for the menu. This is the text that will be displayed on the wall panel LCD when you are scrolling through the menus.
4. In the **Command** drop-down list select a command function that will be associated with your new menu. Next, click the **"Range"** button next to the Command drop-down list to select the control range for this command. For example, if the menu is for controlling gain you could limit the range of gain values available for control with the wall panel.
5. Now click on the **"Link"** button to select which device (Navigator) and which channels on the Navigator will be affected with this new command. This is very important - if you forget to do this the wall panel will not work. One exception to this rule is the command for Program Recall. In this case you only need to choose the device (#1).
6. When you are done setting up your new menu, click Add Menu again to add new menus, setting each one up as required by your application. When you are done, click the **OK** button to apply the new menus. Then, click the File->Save menu to save your work! You can recall this file later to setup another wall panel.



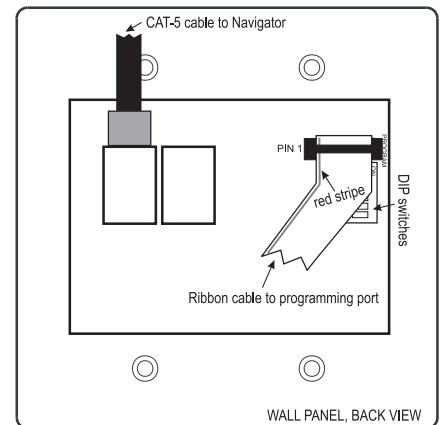
## Programming the Wall Panel - Transferring the settings to the wall panel

The next step is to transfer these new menus into your wall panel controller. This is done using the programming port board and cable that comes with your wall panel. You will also need a standard DB9 serial cable for this step. We suggest you do this close to the Navigator rather than at the wall panel's remote location. In this way you will be able to easily transfer and test the programming.

1. Using a standard RS232 cable, connect your computer's RS232 serial port to the DB9 connector on the programming port. Connect the 10 pin ribbon connector coming from the programming port board to the wall panel at the jack labeled "Program Port", making sure that the red stripe on the ribbon cable is on the end of the connector labeled PIN 1. Next, connect the wall panel to your Navigator using a standard CAT-5 Ethernet cable (either of the RJ-45 jacks on the wall panel will work). You are now ready to program the wall panel.



2. Make sure the Navigator is turned off and then click the **Program->Update menu** on the wall panel setup program. Select the COM port on your PC that is connected to the wall panel, and then click the "Program" button. Next, turn on your Navigator. The progress bar on the screen should immediately begin scrolling. It takes about 20 seconds to program the wall panel. After its done (100%), press the **Close** button. *Very important:* you must now turn off your Navigator and then turn it back on. The wall panel should now be programmed.



### Setup the Navigator

To set up your Navigator for use with the wall panel, you will need to confirm the settings in the **Global** menu. On your Navigator, click the Global button, and then click the right menu arrow until the "Comm" menu appears. Make sure the **Device #** is set to 1. This will vary depending on how many Navigators you have in your system - each needs a unique device number. Next click the right menu arrow until the "Panel" menu appears (shown below). Make sure **Panel Mode** is set to Master and the **# of Panels** is set to 1. The dip switches on the wall panel should all be set to the down or off position, which sets the address to #1.

GLOBAL SETUP MENU: Panel  
 PANEL MODE: Master  
 # OF PANELS: 1

Follow the steps in the next section to verify that the menus on your wall panel are working correctly - you should be able to control your Navigator using the **Menu** and **Value** up/down buttons on the wall panel. Changes made on the wall panel should show on the front panel of the Navigator. If it doesn't seem to be working, verify that you have assigned the link correctly in the setup program.

### Using the Wall Panel

The controls on the wall panel behave just like the controls on the front panel of the Navigator. The one difference is the use of the ENTER and EXIT buttons.

1. Press ENTER to begin using the wall panel. This takes you out of the Main Menu, shown at right.
2. Press the MENU up/down buttons to scroll to the menu you would like to use. In the example at right we named the first menu "Presets," and the current setting is "2." Pressing the MENU down button takes us to the next menu, which we called "Volume."
3. Press the VALUE up/down buttons to edit the values of the menu functions. In this case we can raise or lower the gain on whatever channel we linked to this menu.
4. When you are done editing values press EXIT to return to the main menu.

\* SABINE PANEL \*

Presets  
 1 : 2 1

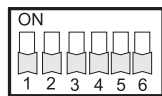
Volume  
 LEVEL: -18.50 dB



## Using Multiple Wall Panels and Multiple Navigators

Your application may require the ability to control one or more Navigators from one or more Wall Panels. Because there is only one Wall Panel connector on each Navigator, you must connect either multiple Navigators or Wall Panels by daisy-chaining the Wall Panels. The Wall Panel has two RJ45 jacks, so you can connect up to two Navigators to one Wall Panel. Or you can connect up to 32 Wall Panels to one Navigator. You can combine these scenarios, too. For example, you might have two Wall Panels, each with the ability to control two Navigators. Here are the procedures for all the possible scenarios. In each case you still must program both the Wall Panel and the Navigator as described on the preceding page.

**1. One Wall Panel connected to one Navigator.** In this situation, set all the dipswitches on the Wall Panel to 'off' (down). Set the Navigator PANEL MODE to Master, and the # of PANELS to 1. This is the scenario described in the setup procedure on the previous page of this guide – see that diagram for the location of the Dip Switch controls.



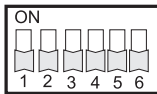
Dip Switches on back of Wall Panel

GLOBAL SETUP MENU: Panel  
PANEL MODE: Master  
# OF PANELS: 1

Front Panel Navigator LCD



**2. One Wall Panel connected to multiple Navigators.** Here, set all the dipswitches down as above. Set ONE of the Navigators PANEL MODE to Master and the rest of them to Slave. All connected Navigators must have unique Device Numbers – the example below shows a Slave set to Device #2. Set # of PANELS to 1 – you are still using just one Wall Panel.



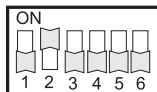
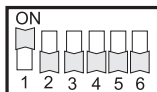
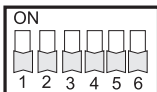
GLOBAL SETUP MENU: Panel  
PANEL MODE: Master  
# OF PANELS: 1

GLOBAL MENU: Comm  
BAUD RATE: 115200  
DEVICE # : 1  
PORT : RS232/USB

GLOBAL MENU: Comm  
BAUD RATE: 115200  
DEVICE # : 2  
PORT : RS232/USB



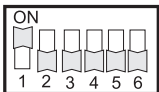
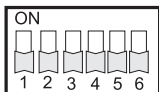
**3. Multiple Wall Panels connected to a single Navigator.** Here, each Wall Panel needs a unique address, set by the dipswitches. For the first Wall Panel, set all dipswitches down as in the above scenarios. For the next, turn dipswitch 1 on. For the next Wall Panel, turn dipswitch 1 off and dipswitch 2 on. Increment these as needed for each additional Wall Panel. The dipswitch settings for each Wall Panel are binary. See the **chart on page 37** for the dip switch settings to use when you have multiple Wall Panels. On the Navigator, set PANEL MODE to Master and set # of PANELS to the number of Wall Panels connected. For example, if there are three Wall Panels, set WP NUM to 3, as shown below.



GLOBAL SETUP MENU: Panel  
PANEL MODE: Master  
# OF PANELS: 3



**4. Multiple Wall Panels connected to multiple Navigators.** In this case set the Wall Panel dipswitches as shown above, giving each a unique address. Set ONE of the Navigators PANEL MODE to Master and the rest to SLAVE. On each Navigator, set # of PANELS to the number of wall panels connected.



GLOBAL SETUP MENU: Panel  
PANEL MODE: Master  
# OF PANELS: 2

GLOBAL SETUP MENU: Panel  
PANEL MODE: Slave  
# OF PANELS: 2

GLOBAL MENU: Comm  
BAUD RATE: 115200  
DEVICE # : 1  
PORT : RS232/USB

GLOBAL MENU: Comm  
BAUD RATE: 115200  
DEVICE # : 2  
PORT : RS232/USB



### Complete the installation

Once you have verified the wall panel is working properly it is time to mount it into the 2-gang wall box. This wall box should be installed in the wall using industry-standard practices, and CAT-5 cable should be running from the Navigator to the box (maximum distance is 200 feet of CAT-5 cable).

1. Remove the ribbon cable from the wall panel and store the cable and the Programming Port board in a safe place. You will need this if you choose to re-program the wall panel.
2. Plug the CAT-5 cable into either one of the RJ-45 connectors on the back of the wall panel.
3. Mount the wall panel on the front of the box using the mounting screws that came with the box.
4. Test the wall panel again and confirm that it is controlling the Navigator. You are ready!

### Tips and Troubleshooting

#### Cables

If the wall panel is not functioning properly cables are the most likely cause. Verify that your CAT-5 cables are properly terminated with RJ-45 connectors. Check the cable with another device to be sure.

#### Version number is flashing

If the second line of the wall panel LCD flashes on and off with the version number, this indicates a problem in the programming of the Navigator Wall Panel Remote software. The most likely problem is the LINK settings. Verify that each of your menus are linked to a device, inputs or outputs, and a channel number. Follow the steps in the Programming the Wall Panel and Transferring the Settings sections of this operating guide and test the wall panel again. The version number should no longer be flashing.

\* SABINE PANEL \*  
WALLPANEL V1.01

#### Controlling multiple channels

If you would like your menus to control multiple channels, you can choose multiple links using the LINK command in the Navigator Wall Panel Remote software. For example, you may want to mute all output channels.

The example at right shows the Link Setup for linking all 8 outputs of a NAV4802-RC or NAV8802-RC. In this case we chose "Mute" in the **Command** menu.

#### Error Updating

You may see this message in the Navigator Wall Panel Remote software. When you start to program the wall panel the power must be off on your Navigator (remember, the wall panel gets its power from the Navigator). If the power is on you will see the "Error Updating" message. Turn off your Navigator and chose **Program->Update** again. You should see the screen that asks you to choose your comm port - proceed as shown in the Transferring the Settings section of this operating guide.

Link #	Device	I/O	Channel
#1	1	OUT	1
#2	1	OUT	2
#3	1	OUT	3
#4	1	OUT	4
#5	1	OUT	5
#6	1	OUT	6
#7	1	OUT	7
#8	1	OUT	8

OK Cancel

#### Customer Service

If you have any other questions regarding the NAVRC-100 Wall Panel please contact us at [sabine@sabine.com](mailto:sabine@sabine.com) or call 800-626-7394.

### 7.3 Mic Preamp (M Option)

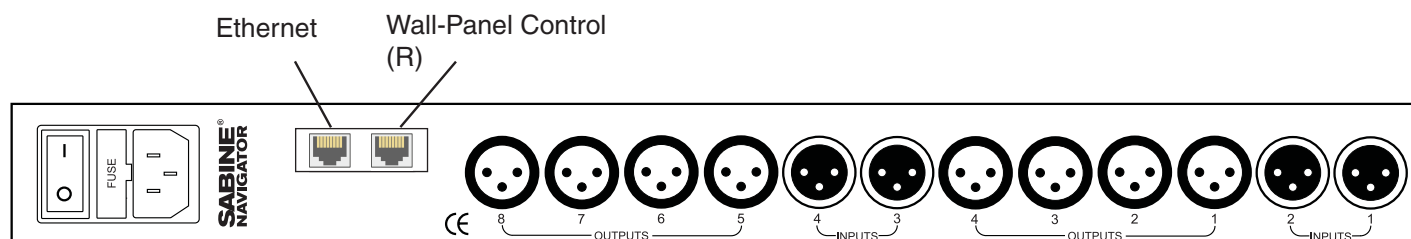
This option allows you to switch between mic or line level on the inputs of your Navigator. This option also provides for phantom power, switchable for all inputs.

Press the Global button on the front panel, then press the Menu>> button several times to get to the Mic Preamp Menu. Use the Cursor buttons to move through each selection, and use the data wheel to toggle Mic or Line for each input. The last field, marked “P,” is used to turn the phantom power on or off.

**CAUTION:** Make sure your entire sound system is muted before toggling the phantom power on or off!

GLOBAL SETUP		MENU: I/O Mode	
I 12: A	I 34: A		
012: A	034: A	056: A	078: A

GLOBAL SETUP		MENU: Mic Preamp	
1: Mic	4: Line	7: Line	
2: Line	5: Line	8: Line	
3: Line	6: Line	P: On	



NAV4802 back panel, with D option (DB25 Connector) and R option (RJ45 connector)

## Digital I/O Option: Wiring diagram for Yamaha AES/EBU Adaptor (for reference only)

Signal	NAV Side MALE	Output (Yamaha) Side FEMALE
GND	1	10
IN1-	2	14
IN2+	3	2
GND	4	12
NC	5	
NC	6	
GND	7	13
OUT1-	8	18
OUT2+	9	6
GND	10	
OUT3-	11	20
OUT4+	12	8
GND	13	22
IN1+	14	1
GND	15	
IN2-	16	15
NC	17	
GND	18	23
NC	19	
OUT1+	20	5
GND	21	24
OUT2-	22	19
OUT3+	23	7
GND	24	25
OUT4-	25	21

**Wall Panel Control Option:** Dipswitch Settings for setting the unique address of up to 32 Wall Panels. Below are the sequenced settings for multiple panels, and these must be used and set in this order.



## Section Eight: Navigator Engineering Specifications

### Audio Performance

Freq Response: +/-0.1dB (20 to 20kHz)  
 Dynamic Range: 115dB typ (unweighted)  
 CMMR: >60dB (50 to 10kHz)  
 Crosstalk: <-80dB  
 Distortion: 0.002% (1kHz @ +4dBu)

### Digital Audio Performance

Processor: 32-bit floating point  
 Sampling Rate: 96kHz (4802, 8802) 48kHz (240, 360)  
 Analog Converters: High Performance 24-bit  
 Propagation Delay: 1.5 ms (4802, 8802); 1.8 ms (240, 360)

### Front Panel Controls

Display: 4 x 26 Character Backlit LCD (4802, 8802)  
 2 x 26 Character Backlit LCD (240, 360)  
 Level Meters: 5 Segment LED  
 Buttons: Mute and Edit Function Controls  
 Select Controls, Menu Controls  
 Data-wheel Encoder

### Inputs and Outputs

Input Impedance: >10k Ohms  
 Output Impedance: 50 Ohms  
 Maximum Level: +18dBu  
 Type: Electronically balanced

### Connectors

Audio: 3-pin XLR, Multi-pin Phoenix (NAV8800)  
 RS-232: Female DB-9  
 USB: Type B  
 Power: Standard IEC Socket

### General

Power: 115 / 230 VAC (50 / 60Hz); 20 watts  
 Dimensions: 19 "x 1.75 "x 8 " (483 x 44 x 203mm)  
 Weight: 6.4 lbs / 2.9 kg

### Audio Control Parameters

Gain: -40 to +15dB in 0.25dB steps  
 Polarity: +/-  
 Delay: Up to 650ms per I/O (4802, 8802)  
 80 ms per I/O (240, 360, 480)  
 Equalizers (8 per I/O)  
 Type: Parametric, Hi-shelf, Lo-shelf  
 EQ Gain: -30 to +15 dB in 0.25 steps  
 Crossover Filters (2 Filters per Output)  
 Filter Types: Butterworth, Bessel, Linkwitz Riley  
 Slopes: 6 to 48dB/oct

### FBX Feedback Exterminator®

8 independent digital FBX filters per input channel,  
 controlled automatically from 20 Hz to 20 KHz  
 Filter depth: 3 dB steps from 0 dB to -84 dB  
 Maximum depth adjustable from -4 to -84 dB  
 Filter width: user-controllable from 1.00 to .01 octave  
 Resolution: 1 Hz from 20 Hz to 20 KHz  
 Time required to find and eliminate feedback: typically 0.3  
 seconds @ 1 KHz

### Compressor/Limiter

Threshold: +20 dBu to -20 dBu  
 Ratio: 1:1 through infinity  
 Attack: 0.3 to 100ms  
 Release: 2 to 32X the attack time

### Microphone Preamp

Gain: 30dB, fixed  
 Phantom Power: +48V, switchable in groups of 4 for 8802;  
 either on or off for all inputs on other units  
 Differential Input Impedance: 2Kohm

### Priority Input Control/Ducker

Up to 8 priority levels  
 Max attenuation: 90 dB  
 Threshold: 0 to -90 dB  
 Attack time: 8ms to 504 mS  
 Release time: 8ms to 504 mS  
 Trigger signal detection minimum dwell time: 0 to 1054 mS  
 Pre-release delay: 0 to 1054 mS

### Global Parameters

Number of Programs: 30  
 Preset Configurations: Generic, 2, 3, 4-Way, plus others  
 Front Panel & Software Security Locks: Any individual  
 menu, password protected

### Upgrades

Operating system firmware stored in Flash RAM. All  
 future upgrades for firmware and software downloadable  
 from Sabine website using Upgrade Wizard.

### Notes:

Below approximately 200 Hz the feedback filters become  
 slightly wider to increase the feedback and rumble  
 capture speed at these low frequencies.

Tests performed using an Audio Precision System One  
 model 322 or equal.

(SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE)

One-year limited warranty  
 Patented

## Section Nine: Cautions & Warranty

**Warning!** This equipment must be earthed.

**Caution!** Risk of electric shock. Do not open.

**Caution!** Shock hazard. Do not remove covers. No user serviceable parts inside. Refer servicing to qualified service personnel.

**Warning!** To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.

**Attention!** Cet appareil doit être relié à la terre.

**Attention!** Risque de choc électrique; ne pas ouvrir.

**Attention!** Risque de choc; ne pas ôter les capots. Aucune pièce accessible à l'intérieur. S'adresser à un technicien qualifié.

**Attention!** Pour réduire le risque d'incendie ou de choc électrique, ne pas laisser l'appareil sous la pluie ou à l'humidité.

**Achtung!** Dieses Gerät muss geschützt sein.

**Achtung!** Gefahr eines elektrischen Stromschlags. Gehäuse nicht öffnen.

**Achtung!** Gefahr eines elektrischen Stromschlags. Gehäuse nicht öffnen.

Keine von Benutzer zu bedienenden Teile im Geräteinneren.

Überlassen Sie das Gerät zu Servicezwecken nur geschultem Fachpersonal.

Um Brandgefahr oder das Risiko eines elektrischen Schlags auszuschließen, das Gerät vor Nässe und Feuchtigkeit schützen.

**Advertencia!** Este equipo debe estar conectado a tierra.

**Precaución!** Riesgo de descarga eléctrica. No abrir.

**Precaución!** Riesgo de descarga eléctrica. No desmontar las tapas. Piezas interiores no reparables por el usuario. Reparable sólo por personal cualificado.

**Advertencia!** Para reducir el riesgo de incendio o de descarga eléctrica no exponga este producto a la lluvia o humedad.

### FCC Statement:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference; and (2) This device must accept any interference received, including interference that may cause undesired operation. *Warning:* Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

### Canadian Compliance Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

### Japanese EMI Compliance Statement

この装置は、第二種情報装置

(住宅地域又はその隣接した地域において使用されるべき情報装置)で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会(VCCI)基準に適合しております。

しかし、本装置をラジオ、テレビジョン受信機に近接してご使用になると、受信障害の原因となることがあります。

取扱説明書に従って正しい取り扱いをして下さい。



## Warning!



The Navigator is designed to operate from standard AC power. Please be sure the power in your area is compatible with the power requirements marked on the rear of the unit. Using the wrong input voltage may cause permanent damage to the unit and will void the warranty.

The Navigator is supplied with one of the following AC power cords:

Japan	100 VAC
U.S./North America	120 VAC
Continental Europe	230 VAC
United Kingdom	240 VAC
Australia	240 VAC



## Caution!



Replace the fuse with a fuse of exactly the same rating specified on the rear of the product.

1. Read all safety and operating instructions before using this product.
2. All safety and operating instructions should be retained for future reference.
3. Obey all cautions in the operating instructions and on the unit.
4. All operating instructions should be followed.
5. Use only shielded audio and data cables.
6. This product should not be used in the presence of moisture or rain, or near any water, i.e., a bathtub, sink, swimming pool, wet basement, etc.
7. This product should be located so that its position does not interfere with proper ventilation. Do not use in direct sunlight. Do not place flat against a wall or in a built-in enclosure that will impede the flow of cooling air.
8. This product should not be placed near a source of heat such as a stove or radiator.
9. Connect only to a power supply of the type marked on the unit adjacent to the power entry module.
10. Never break off the ground pin on the power supply cord.
11. Power supply cords should always be handled carefully. Never walk or place equipment on power supply cords. Periodically check cords for cuts or signs of stress, especially at the plug and the point where the cord exits the unit.
12. The power supply cord should be unplugged when the unit is to be unused for long periods of time.
13. Care should be taken so that objects do not fall and liquids are not spilled into the unit through the ventilation holes or any other openings.
14. This unit should be checked by a qualified service technician if:
  - A. The power supply cord or plug has been damaged.
  - B. Anything has fallen or been spilled into the unit.
  - C. The unit does not operate correctly.
  - D. The unit has been dropped or the enclosure damaged.
15. The user should not attempt to service this equipment. All service work should be done by a qualified service technician.

OSHA 2201; 1995 revised.

## CAUTION

EXPOSURE TO EXTREMELY HIGH NOISE LEVELS MAY CAUSE A PERMANENT HEARING LOSS. INDIVIDUALS VARY CONSIDERABLY IN SUSCEPTIBILITY TO NOISE INDUCED HEARING LOSS, BUT NEARLY EVERYONE WILL LOSE SOME HEARING IF EXPOSED TO SUFFICIENTLY INTENSE NOISE FOR A SUFFICIENT TIME. THE U.S. GOVERNMENT'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) HAS SPECIFIED THE FOLLOWING PERMISSIBLE NOISE LEVEL EXPOSURES:

DURATION/DAY IN HOURS	SOUND LEVEL IN dBA, SLOW RESPONSE
8	90
6	92
4	95
3	97
2	100
1-1/2	102
1	105
1/2	110
1/4 or less	115

ACCORDING TO OSHA, ANY EXPOSURE IN EXCESS OF THE ABOVE PERMISSIBLE LIMITS COULD RESULT IN HEARING LOSS. EAR PLUGS OR PROTECTORS IN THE EAR CANALS OR OVER THE EARS MUST BE WORN WHEN OPERATING THIS DEVICE IN ORDER TO PREVENT A PERMANENT HEARING LOSS, IF EXPOSURE IS IN EXCESS OF THE LIMITS AS SET FORTH ABOVE. TO ENSURE AGAINST POTENTIALLY DANGEROUS EXPOSURE TO HIGH SOUND PRESSURE LEVELS, IT IS RECOMMENDED THAT ALL PERSONS EXPOSED TO EQUIPMENT CAPABLE OF PRODUCING HIGH SOUND PRESSURE LEVELS SUCH AS THIS DEVICE BE PROTECTED BY HEARING PROTECTORS WHILE THIS UNIT IS IN OPERATION.

## CAUTION

This apparatus contains a lithium battery. Replacement shall be made by qualified service personnel only.  
Call Sabine at (386) 418-2000 or consult an authorized Sabine agent.

FBX and FBX Feedback Exterminator are registered trademarks of Sabine, Inc., and are the brand names of its line of automatic feedback controllers. Covered by U.S. Patent No. 5,245,665, Australian Patent No. 653,736, Canadian Patent No. 2,066,624-2, German Patent No. 69118486.0, and U.K. Patent No. 0486679. Other patents pending.

Navigator, Graphi-Q, POWER-Q, REAL-Q, and REAL-Q2 are trademarks of Sabine, Inc.  
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## Limited Warranty

THIS LIMITED WARRANTY VALID ONLY WHEN PURCHASED AND REGISTERED IN THE UNITED STATES OR CANADA. ALL EXPORTED PRODUCTS ARE SUBJECT TO WARRANTY AND SERVICES TO BE SPECIFIED AND PROVIDED BY THE AUTHORIZED DISTRIBUTOR FOR EACH COUNTRY.

Ces clauses de garantie ne sont valables qu'aux Etats-Unis et au Canada. Dans tous les autres pays, les clauses de garantie et de maintenance sont fixées par le distributeur national et assurées par lui selon la législation en vigueur.

Diese Garantie ist nur in den USA und Kanada gültig. Alle Export-Produkte sind der Garantie und dem Service des Importeurs des jeweiligen Landes unterworfen.

Esta garantía es válida solamente cuando el producto es comprado en E.U. continentales o en Canadá. Todos los productos que sean comprados en el extranjero, están sujetos a las garantías y servicio que cada distribuidor autorizado determine y otorgue en los diferentes países.

### ONE-YEAR LIMITED WARRANTY/REMEDY

SABINE, INC. ("SABINE") warrants this product to be free from defects in material and workmanship for a period of one (1) year from date of purchase PROVIDED, however, that this limited warranty is extended only to the original retail purchaser and is subject to the conditions, exclusions and limitations hereinafter set forth:

### CONDITIONS, EXCLUSIONS AND LIMITATIONS OF LIMITED WARRANTIES

These limited warranties shall be void and of no effect if:

- The first purchase of the product is for the purpose of resale; or
- The original retail purchase is not made from an AUTHORIZED SABINE DEALER; or
- The product has been damaged by accident or unreasonable use, neglect, improper service or maintenance, or other causes not arising out of defects in material or workmanship; or
- The serial number affixed to the product is altered, defaced or removed; or
- The power supply grounding pin is removed or otherwise defeated. In the event of a defect in material and/or workmanship covered by this limited warranty, Sabine will repair the defect in material or workmanship or replace the product, at Sabine's option; and provided, however, that, in any case, all costs of shipping, if necessary, are paid by you, the purchaser.

THE WARRANTY REGISTRATION CARD SHOULD BE ACCURATELY COMPLETED, MAILED TO AND RECEIVED BY SABINE WITHIN FOURTEEN (14) DAYS FROM THE DATE OF YOUR PURCHASE.

In order to obtain service under these warranties, you must:

- Bring the defective item to any Authorized SABINE DEALER and present therewith the ORIGINAL PROOF OF PURCHASE supplied to you by the AUTHORIZED SABINE DEALER in connection with your purchase from him of this product. If the DEALER is unable to provide the necessary warranty service, you will be directed to the nearest other SABINE AUTHORIZED DEALER which can provide such service.

OR

- Ship the defective item, prepaid, to:

SABINE, INC.  
13301 HIGHWAY 441  
ALACHUA, FL 32615-8544

including therewith a complete, detailed description of the problem, together with a legible copy of the original PROOF OF PURCHASE and a complete return address. Upon Sabine's receipt of these items:

If the defect is remedial under the limited warranties and the other terms and conditions expressed have been complied with, Sabine will provide the necessary warranty service to repair or replace the product and will return it, FREIGHT COLLECT, to you, the purchaser. Sabine's liability to the purchaser for damages from any cause whatsoever and regardless of the form of action, including negligence, is limited to the actual damages up to the greater of \$500.00 or an amount equal to the purchase price of the product that caused the damage or that is the subject of or is directly related to the cause of action. Such purchase price will be that in effect for the specific product when the cause of action arose. This limitation of liability will not apply to claims for personal injury or damage to real property or tangible personal property

allegedly caused by Sabine's negligence. Sabine does not assume liability for personal injury or property damage arising out of or caused by a non-Sabine alteration or attachment, nor does Sabine assume any responsibility for damage to interconnected non-Sabine equipment that may result from the normal functioning and maintenance of the Sabine equipment.

UNDER NO CIRCUMSTANCES WILL SABINE BE LIABLE FOR ANY LOST PROFITS, LOST SAVINGS, ANY INCIDENTAL DAMAGES OR ANY CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT, EVEN IF SABINE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

THESE LIMITED WARRANTIES ARE IN LIEU OF ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE; PROVIDED, HOWEVER, THAT IF THE OTHER TERMS AND CONDITIONS NECESSARY TO THE EXISTENCE OF THE EXPRESS LIMITED WARRANTIES, AS HEREINABOVE STATED, HAVE BEEN COMPLIED WITH, IMPLIED WARRANTIES ARE NOT DISCLAIMED DURING THE APPLICABLE ONE-YEAR PERIOD FROM DATE OF PURCHASE OF THIS PRODUCT.

SOME STATES DO NOT ALLOW LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THESE LIMITED WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

THESE LIMITED WARRANTIES ARE THE ONLY EXPRESS WARRANTIES ON THIS PRODUCT, AND NO OTHER STATEMENT, REPRESENTATION, WARRANTY OR AGREEMENT BY ANY PERSON SHALL BE VALID OR BINDING UPON SABINE.

In the event of any modification or disclaimer of express or implied warranties, or any limitation of remedies, contained herein conflicts with applicable law, then such modification, disclaimer or limitation, as the case may be, shall be deemed to be modified to the extent necessary to comply with such law.

Your remedies for breach of these warranties are limited to those remedies provided herein, and Sabine gives this limited warranty only with respect to equipment purchased in the United States of America.

### INSTRUCTIONS-WARRANTY REGISTRATION CARD

- Mail the completed WARRANTY REGISTRATION CARD to:

SABINE, INC.  
13301 HIGHWAY 441  
ALACHUA, FL 32615-8544

- Keep the PROOF OF PURCHASE. In the event warranty service is required during the warranty period, you will need this document. There will be no identification card issued by Sabine, Inc.

### 2. IMPORTANCE OF WARRANTY REGISTRATION CARDS AND NOTIFICATION OF CHANGES OF ADDRESS:

- Completion and mailing of WARRANTY REGISTRATION CARDS - Should notification become necessary for any condition that may require correction, the REGISTRATION CARD will help ensure that you are contacted and properly notified.
- Notice of address changes - If you move from the address shown on the WARRANTY REGISTRATION CARD, you should notify Sabine of the change of address so as to facilitate your receipt of any bulletins or other forms of notification which may become necessary in connection with any condition that may require dissemination of information or correction.
- You may contact Sabine directly by telephoning (386) 418-2000.
- Please have the Sabine product name and serial number available when communicating with Sabine Customer Service.

Sabine, Inc.  
13301 NW US Highway 441  
Alachua, Florida 32615-8544 USA  
Phone: (386) 418-2000 • Fax: (386) 418-2001 www.  
Sabine.com • sabine@sabine.com

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the sound of innovation



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Fax: (386) 418-2001

*Register your Sabine product online at*  
**[www.Sabine.com](http://www.Sabine.com)**